Vol. 5 No. 9 September 13 - October 11, 1996

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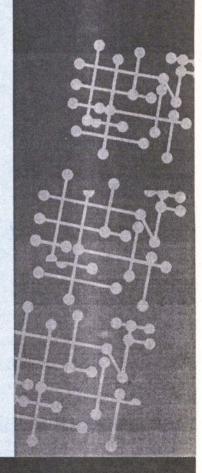
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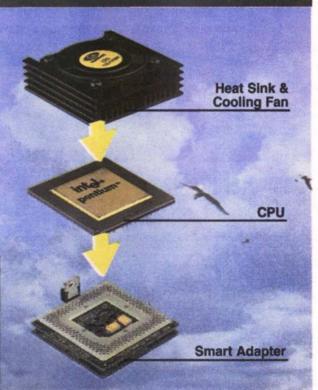
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Small Mysteries

S

o, what's on your laptop?

That's a question certain advertisements inspire one to ask. You know, the ones where a particular notebook computer manufacturer has celebrities list the contents of their laptops. Knowing what's on some-

one's laptop is made to be the equivalent of getting a glimpse at their secret inner-workings. And in many ways, it is.

Case in point: you're on a plane and the guy one seat over is typing away furiously. When you glance over in his direction, he snaps the cover shut. Your brain starts spinning wildly. Could it be a terrorist plot? Does he have a CAD rendering of the plane's interior? What is it that he insists you don't see?

Or, you're at a staff meeting and one member is hunched over her keyboard, clicking away madly, but no one else is. Does this have anything at all to do with the meeting? Does she have an understanding of what's going on that far transcends your own?

For many people, laptops are like



laptops are like diaries—they contain all their secrets. But since most of us love to indulge in notmeant-to-bedivulged documents, it's hardly surprising that obtaining access to someone's laptop can be so intriguing.

For example, my laptop contains:

- A list of story ideas for upcoming issues of Computer Player! (updated regularly with your suggestions)
- FirstClass software for interoffice email and Newsbytes
- An Excel spreadsheet for the October story lineup, which includes a feature on setting up your home office and how to chose a computer consultant
- Letters from readers (especially ones that motivate us in new, creative directions, or ask us to fix something)
- A list of important Web URLs (Universal Resource Locators), including the one that lets me track how many hits we receive at http://www.canadacomputes.com/
- A list of items I'd like to fix around the house
- Some very early ideas for Christmas presents
- A letter to a friend that talks about the unbelievably bizarre...

Whoops! Almost got carried away. Did you think I'd tell all?

HAL, made small

But something else puts notebookcomputer sales projections at double what they are now by the year 2001: the model, the price, and the features. When the guy in the bus stop flips open the black casing, you instinctively want to lean over and see what he's got. Is it a Rolex or a fake? Is it top-of-the-line multimedia? Is it the one you were drooling over at the store last week? While you can hide your PC in your bedroom, you can't hide your laptop.

It's hard to imagine that just under a decade ago, I considered my nine-pound Mac Classic a "portable computer." It's about the size of the monitor I use today, but I casually lugged the monster onto planes—as a carry-on. Needless to say, back in those days, customs officials weren't quite used to baggage like that! "Excuse me? An external drive? Step over to the side, ma'am!"

Only four years ago, my 20 MB hard-drive laptop was top-of-the-line. It had a black and white screen, no CD-ROM drive, and moved at the speed of a turtle. But I, the new, proud owner, imagined myself in legendary laptop situations (once again, the stuff of ads).

With these little gadgets, they promised, you could work high atop a cliff while the sun was setting, on a verdant hillside, on the beach... Even now they portray pictures of bronzed individuals diving into the ocean, "escaping the office, but not leaving it behind." The possibilities seemed endless.

A plague of notebooks

As I outlined in this column last month, I have already once been severely rebuked by Mother Nature for taking high-tech to the wilderness. (And a big thank you to those readers who offered suggestions on various solar panel alternatives. I'll keep you posted on the results!)

But most of the time, I don't necessarily want to drag my laptop to exotic locales. We're so inundated with technology and information in our everyday lives, that occasionally it's nice to take a break. Could I please scale that wall without a laptop?

Yet an increasing number of professions are going mobile. Lawyers take laptops on the road so they can refer to zillions of files—without crawling through libraries. Insurance salesmen call up quotes. Real-estate agents are getting closer to taking us on virtual walk-throughs. And this fall, 14 sail-boats participating in an around-the-world race will be equipped with note-books that have both communications and weather software. How's that for connectivity?

It seems the quest for ultimate portability has barely begun. If you want to get your feet wet, read on...

Enjoy the issue!

Māra Gulens, Editor

editor @tcpon.com

Sept.13-Oct.11, 1996 Notebooks. 46 The heavy hitters A look at eight high-end notebooks High wired! 47 Portrait of a high-tech wall-crawler NEWS Amiga lives despite Escom bankruptcy Toronto BBS busted More medals for Canada Giants converging in communications More news FEATURE 12 Spinning Web into gold. Making money on the internet 24 PGP. Encryption for the masses Wireless data communication shakg, but promising PC vs. console. The gamer's lowdown Nerd school Understanding your grammar checker 42 The ISBN Experience PROFILE Andrew Cochran. Bringing television to the Net UULINE 21 Hnow when to fold'em. Gambling on the Det 41 Consumer advice for Canadians in caberspace 53 Getting psyched for online banking INTERNET 32 There and back again... how your data travels on the Net 08/2 35 Approaching Merlin HARDWARE 37 PCTV products. An overview COLUMNS 40 Videoconferencing: Getting it together 44 It's a MacWorld after all NETWORKING 50 Hach attack. Protecting your network data SOFTWARE 52 The ultimate ghostly experience INVESTMENT 54 Technology sector stocks. Wall street highlights MULTIMEDIA 56 Multimedia encyclopedias: An overview 89 Back your computer! BUSINESS 64 Closing in liability window

AMIGA LIVES

DESPITE ESCOM BANKRUPTCY

By SANDY MCMURRAY



The Amiga computer has been rescued from bankruptcy again, this time by Chicago-based Visual Information Service Corporation (VIScorp).

On July 19, 1996, VIScorp CEO Bill Buck signed the final agreement to purchase, for an undisclosed sum, the intellectual property and inventory formerly owned by Amiga Technologies GmbH, a subsidiary of Escom of Germany (Escom acquired the Amiga from US bankruptcy court in April of 1995, one year after Commodore sought protection from its creditors).

In "An Open Message to the Amiga Community" dated July 24, 1996, Buck said, "There were at least eleven different banks or companies that had claims to be 'owners' of the technology and/or the inventory. Escom had liabilities of over \$250 million. Imagine the confusion."

VIScorp plans to use the Amiga operating system and custom chip sets in its interactive television set-top devices, the UITI (Universal Internet-Television Interface) and the ED (Electronic Device). VIScorp also says the development of Amiga desktop computer systems is "one of the primary objectives" of its business plan.

Toronto BBS busted

• • By LEE LESTER • •

A Toronto house allegedly contained what investigators believe was one of the biggest pirate bulletin board systems in North America.

Documents filed in the Federal Court of Canada by the Canadian Alliance against Software Theft and the Washington-based Business Software, after the house on Rhodes Ave. was raided, claim that among the copied programs distributed by the Beyond Akira BBS was an unreleased beta version of Microsoft's Windows NT Workstation 4.0 and its Return of Arcade game.

Three Amiga 2000 computers, 14 modems, and an IBM computer linked to a CD-ROM copying machine are alleged to have been found in a spare bedroom and seized in the raid.

One of the board operators is said to have created and sold (for only \$70) a compilation CD-ROM containing copies of Delrina Commsuite 95; Microsoft's Access, Excel, Plus!, PowerPoint, Word, Works for Windows 95, Project 4.1, and Publisher 3.0, Symantec's Norton Utilities for Windows 95, and Windows 95 itself.

"This case is a critical example of the soft-

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ware industry's determination to respond to technically advanced challenges, including suspected online piracy and counterfeit CD-ROM production and distribution," states CAAST General Counsel Michael Eisen.

Where's the line?

"It is becoming increasingly apparent that the fine line between bulletin-board piracy and Internet piracy is slowly eroding."

A CAAST lawsuit seeks \$100,000 punitive damages, restraining injunctions, details of profits, and interest and costs. Named as defendants are brothers Humzah and Zayd Khaial and their mother Khadjia, who is said to be in Egypt.

Humzah is alleged to have called himself Pharaoh while acting as the board's systems operator. Investigators claim users were asked for \$30 donations, which gave them 60 minutes online and unlimited downloads per day. The board is said to have been linked to 13 other nodes, 2 of which were connected to the Internet.

It was penetrated by Microsoft investigators and private detectives after a tip-off from a Toronto informant. Evidence was also obtained from the Federal Bureau of Investigation.

More

medals

for Canada

. By LEE LESTER . .

hree of Canada's four competitors in

the International Olympiad in

Informatics brought medals home

from Veszprém, Hungary, where 215

young math geniuses from 57 countries

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Team Canada, selected from more than

2.000 students from across the country.

was sponsored by Sybase, Inc., in

School in Gloucester, Ontario, won a sil-

ver medal. Donny Cheung, of St. John's-

Ravenscourt School and Darryl Shpak, of

Immanuel Christian School, both in

Winnipeg, won bronze medals. David

Pritchard, from Danforth Collegiate

Institute in Toronto, was the other team

Alan Martin, from Gloucester High

in computer science.

member.

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Publisher Douglas Alder Associate Publisher Kent Ligin Chen Marketing Director Li Ding Editor Mara Gulens, editor@tcpon.com

Assistant Editor Lara Thais King Associate Editor Alan Zisman, Myles White

Managing Editor Jim Chow

Production Yann Chan, Sherly Ho, Karin Hartwig

Controller Chris McPhie

Advertising Sales Manager Li Ding, li@tcp.ca **Advertising Sales**

Jamie Leighton, jamie@tcp.ca Randy Chaster, randy@tcp.ca Frank Houston, frank@tcpon.com Marsha Miller, marsha@tcpon.com

Accounting Farida Aini **Distribution** Tom Maykut Founders Kent Ligin Chen, Li Ding

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Toronto Computes!

99 Atlantic Ave., Suite 408 Toronto, ON M6K 3J8

Tel: (416) 588-6818 Fax: (416) 588-4110

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The Devenish Building 908 - 17 Ave. S.W., Suite 306 Calgary, AB T2T 0A3 Tel: (403) 228-3355 Fax: (403) 228-3456

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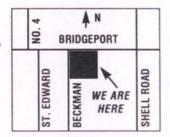
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Giants converging in communications

 By CHRISTOPHER GULY • • y late 1997, Canadian consumers will be able to use their telephone lines to watch television or movies, and use their cable-TV lines to hook up to the Net or place a call.

This convergence of communications technologies is the result of the federal cabinet's early August decision to allow cable-TV and phone companies to compete in each other's markets.

"The object of the exercise is to produce choice, to produce technological innovation, as well as to bring about lower prices for consumers," said Industry Minister John Manley shortly after the government's announcement.

Unquestionably, choice is what Canadians will get. Already, some of the country's largest telephone utilities, including Bell, are examining the viability of bundling services into consumer packages that would include phone service, Net links, and video-ondemand.



Meanwhile, cable-TV companies are experimenting with sending video along copper telephone lines, and moving from one-way analogue service to two-way digital, high-resolution offerings. To achieve their competitive goals, both communications giants need not look very far in finding a technological helping hand.

Several Canadian high-tech companies are already developing and marketing complete cable-phone packages. For instance, Northern Telecom Ltd. sell networks to phone and cable companies in the United States and Britain. And both Newbridge Networks Corp. and SHL Systemhouse Inc. design high-speed networks used to transmit voice, data and video signals.

Ouch!

However, despite the availability and capability of convergence technology, the industries involved admit consumers will initially pay hefty bills to adapt their traditional services. Before you get to watch television through your phone line, you might have to pay \$1,000 to accommodate video-ondemand service. Similarly, to equip your cable-TV line with phone-Net service, you might have to pay \$500.

Nevertheless, the major players in this intensely competitive communications game are out there practising. Bell is currently awaiting a go-ahead from the Canadian Radio-television and Telecommunications Commission to begin testing their 200-channel, video-ondemand service next March in London. Ontario, and Repentigny, Quebec. •

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New certification course for Web masters

• • By PAUL LIMA • •

Novell Inc. has expanded its worldwide programs for certified technical-support professionals to include a new series of courses on the Internet and intranets (Internet-style means of communication used within corporations). Novell has approximately 70 per cent market share of the network market and its Certified Network Engineering and Administration (CNE/CNA) programs are de facto industry network training standards.

The owners of the more than 3.5 million Novell networks have already invested in 90 per cent of the software infrastructure needed for intranet capability. And the intranet is touted by some as the next big thing in corporate communications

The I*net (Inter and intranet, as coined by PC Week) will alter the basic fabric of organizational life, says Robert Fabian, principal, GSA Consulting Group. "Formerly, the social and technical contexts determined the meaning of work. Today, the information context is a third determining factor. And that context is of the essence of computing and communications."

The Novell Internet Manager certification program prepares those commonly referred to as Web masters to manage the overall technical project of running an Internet or intranet site. Sample job tasks covered in the certification program include providing support, managing security, performing capacity planning, and installing client/server applications for the site, as well as HTML tasks such as reading/writing HTML and converting documents to HTML. The Novell Internet Manager consists of six courses and five examinations.

"The Novell Internet Manager certification will be to the Internet/intranet what the Novell Authorized CNE is to business LANs and WANs," says Carolyn G. Rose, senior vice president and general manager of Novell Education.

Four of the courses are available through Novell Authorized Education Centres (NAECs) and additional courses are scheduled to be available in the fall. Novell's expects many of its existing base of 400,000-plus certified individuals will gravitate to the Internet/intranet advanced certification programs.

imagi.net buys out Internet Express

. . By JIM CHOW . .

Vancouver-based Internet service provider (ISP), imagi.net Communication Group Inc., has acquired all the assets of West Coast Internet Express, another Vancouver-based ISP. The buyout was the second ISP purchase for imagi.net which also acquired Net Nation Internet.

Mike Coderre, president of imagi.net, said the clients of Internet Express will get better value for their money. They'll get more hours online for the same money. The pipe on imagi.net is a 10Mbps bi-directional backbone, the equivalent of 7 T1 lines in bandwidth available, imagi net offers 24 hour tech support for Macintosh, Windows 3.1 and Windows 95 operating systems. Coderre says he offers true Mac support. The Mac guy is a true Mac user, not some DOS guy with a bit of Mac experience. In fact the Mac guy doesn't know that much about

The transaction went smoothly without an interruption of service to Internet Express

Total time for the transaction from the day it was known to the hand over was less than four

weeks. The sale closed Sept. 5 at 9:30 am. Financial details of the transaction were not disclosed

Crude-comedy fans in BC hear five-letter word at work: fired

• • By CHRISTOPHER GULY • •

The BC Supreme Court recently dismissed an appeal by two men who were fired from their jobs after sending offensive e-mail.

MacDonald Detwiler and Associates' switchboard operator Nicolas Di Vito and Alastair Mathers, who worked in the maintenance department, were dismissed from their jobs after they electronically transmitted the transcript from an Andrew "Dice" Clay monologue that crudely described having sex with an obese woman

The pair also sent a hard copy of the comic's vulgarities to a former female colleague

Although the two men initially denied any responsibility, they later admitted to the deed and were swiftly fired in May 1995. They filed a claim of wrongful dismissal in July 1996.

Justice Ian Drost agreed that firing the two employees over their e-mail prank might have been harsh. Given their initial denial, however, Drost ruled there was sufficient cause for dis-

Toronto employment lawyer Randall Echlin says the BC ruling may send a chill for workplace e-mail correspondence.

"Don't send anything you wouldn't say in person or in a business letter," Echlin told Law Times. "It's no less subject to libel than a piece

Canadian crime-catching software now on the beat

• • By CHRISTOPHER GULY • •

Two new computer software programs could help police track down both breakand-enter artists and serial killers.

The Ottawa-Carleton police department has been testing a new program, called InvestigAide, which was developed by Aija Information Technology Consultants Inc., an Ottawa company, and sold to the police force two years ago. After police investigators enter the specifics of a B&E, such as time of day, address, method of entry, and a list of stolen property, InvestigAide creates a profile of suspects.

Last year, there were 8,000 B&Es reported in the Ottawa area, only 25 per cent of which were solved.

Although InvestigAide is only used for residential break-ins in the Ottawa area, Aija plans to create a separate product for commercial B&Es, as well as tracking tools for more violent criminal activity.

Orion the hunter

But on the latter front, Aija is behind a geographic-profiling system created by Vancouver detective Kim Rossmo. Called Orion, Rossmo's system uses a computerized grid to pinpoint crime scenes.

Contour lines, called isopleths (the Greek word for "equal numbers") are drawn between the sites, which are then linked to the possible location of the perpetrator's residence. Colour codes identify the degree of likelihood of a link soft tones for low probability and dark tones, such as red, for a strong one.

Rossmo, who also teaches criminology at Simon Fraser University, became hooked on the importance of geography in criminal investigations shortly after he joined the Vancouver Police Department 16 years ago. After obtaining



his doctorate, in which he studied the link between serial criminal activity and a perpetrator's domicile, Rossmo created Environmental Criminology Research Inc., which created Orion. He claims 75 per cent of serial killers operate in their own backyards.

The RCMP in Vancouver are poised to incorporate Rossmo's tracking system into their own criminal investigations. They are looking to Orion as a way to enhance their own tracking system, ViCLASViolent Crime Linkage Analysis System, which was also developed in British Columbia

While Orion relies of the mathematics

behind geographical data to link criminal incidents, ViCLAS correlates crimes by other characteristics, such as age and gender.

Live Olympic "netcast" attracts attention for BC firm

• • By STEVE BAIN • •

During the Atlanta Olympics, ITV.Net, a small, Vancouver-based company, provided what they describe as a "Beatnik" view of the proceedings via the Internet, by way of a live videocasting technique called "netcasting."

Using plugins available from the company's

Web site (http://www.itv.net), visitors were able to view interviews with sports celebrities, including Shaquille O'Neal, Scottie Pippen, Reggie Miller, and Evander Holyfield.

Only a year old, ITV.Net already has a full-time staff of 11, and draws from a pool of 15 indus-

The technology isn't new, but the company's perspective is.

In the extreme

"The majority of our video content at the moment concentrates on extreme sports," says marketing director Steve Everitt. "Currently, we have agreements set up with extreme-sports

filmmakers like Warren Miller and Tony Roberts, and have nearly collected together enough content to broadcast a 24-hour extreme-sports channel on the Internet.

"Until then, we've been concentrating on events such as bands, the Olympics, and concerts in other parts of the world. We're trying to find stuff that is not available through any other media source, so that we aren't competing directly with mediums like television."

The technique uses video-streaming technology software including VDOLive, Streamworks, Freevue, and CUSeeMe. "Web users simply get our plugins, click on a video, wait a few sec-

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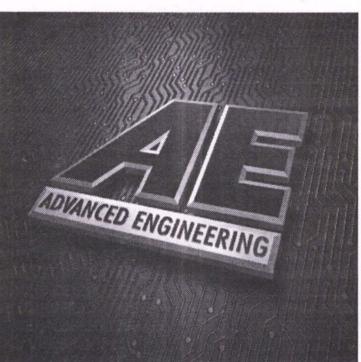
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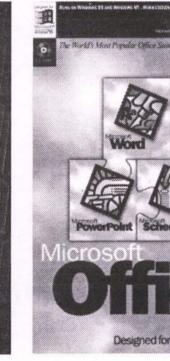
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BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

onds, and begin to receive our broadcast," explains Everitt. "The setup takes about a 10- to 15-second buffer period, where it starts streaming video to you. Once it catches up, you can view the images."

Watch out, ER

But, in most cases, competing with television is exactly what experts who study these things say is happening. Instead of spending hours absorbing passive television shows, many consumers are opting for time on the World Wide Web, where control and choice are completely

can choose to view live Internet video feed or choose to view an archived video of their choice

Until their 24-hour Internet television channel is launched, the company keeps busy working with large companies as video solution service providers. "For example," says Everitt, "because of our partnership with Digital Equipment Corporation on the Atlanta Olympics, we were attracting business from sponsors who already have conventional television commercials. We were able to take those

commercials and put them into our live feed. "For our 24-hour channel, we're trying to keep

our sponsorship low though. Right now, television's content is roughly 25 per cent advertising, and we're aiming at a maximum advertising content of 10 per cent. We don't want to put users off, but at the same time we don't want to have to charge users. Our aim in this early stage is to work on a break-even scenario."

"We're basically exploding in terms of growth," says Everitt, "but it's been a long hard trial for us. Right now we're getting calls from companies such as MCA, Capitol Records, and Sony Digital, all the way down to family-owned businesses. It's amazing the number of companies who are interested in putting video on their Web site."

So far, Everitt says, the company has worked on the Grammies, the Junos, and even did a bit of work with Timothy Leary. And, although it's not up yet, they've even built a Web site for BC Premiere Glen Clark, the most popular area of which will likely be the feedback feature.

BC apartment hunting hits the Web

By STEVE BAIN • •

If you're tired of trudging from one end of the city to the other in a frustrating search for a suitable house or apartment to rent, the task has just gotten a little easier-provided you have Internet access, of course

BC Renter's Guide, which most of us know as one of the many free booklets found in the newspaper racks at the local convenience store, launched a new World Wide Web site (http://www.bc-renters-guide.bc.ca/) August 1, listing available rental properties in certain areas of the province. The list is available free of charge to anyone with Internet access-whether you are a landlord with an available property or a tenant in need of accommodations. Ads remain active for 30 days from date of placement on the site. They may also be faxed or phoned in.

The Web site's database of available accommodations is searchable by city and neighborhood, and results may be displayed and sorted by rental rate or date posted. House hunters may also choose to use more advanced search features, including defining the number of bedrooms or bathrooms, the type of accommodation (house apartment townhouse condominium, and so on), and specific details about the living arrangements sought (such as laundry, fitness facilities, non-smoking, or pets).

Final search results also yield more specific information about listed properties, including availability, rental cost, special features such as physical proximity to public transportation, shopping, and schools, as well as other information such as skylights, luxuries, living amenities, and, of course, the landlord's phone number.

Anybody home?

Visitors to the site will find the service simple to use, but may be disappointed by the sparse number of listings currently found in each of the categories, which will likely remain until

Areas to search at the moment include Nanaimo, Victoria, Vancouver and the Lower Mainland, Abbotsford, and Whistler. Each of these cities is divided into its own searchable neighborhood areas. For example, the Vancouver area is broken down into 20 individual neighborhoods, while Victoria lists 10. As demand grows, the site will be expanding to include other areas as needed.

This convenient house-hunting Web site is not only aimed at local residents looking to change their current living arrangements, but will also appeal to potential out-of-town residents from any part of the country, or even the world. The fact that British Columbia is the destination of choice for a good portion of provincial and international immigrants makes this the perfect application for a Web site.

For accommodation seekers who don't have Internet access, information on the site can be accessed through a phone-in or fax-in service, for a fee. To reach the BC Renter's Guide by phone, call (604) 472-8223, or contact the company by mail at 3986 Bear Street, Victoria, BC, V8N 3R1

The company says it is dedicated to providing the guide as a free service to potential tenants and landlords, but maintaining the site is costly and time consuming. Anyone wishing to sponsor the site (advertise) or donate maintenance time should contact the webmaster@bcrenters-guide.bc.ca.

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Spinning Web into gold: Making money on the Internet

The Internet Gold Rush is on! Are you ready to make some serious money?

• • By PAUL LIMA • •

"There's gold in them thar hills!" was the prospector's cry during gold rushes in the 1800s. "There's gold in cyberspace!" seems to be the cry of today's businessperson. While few prospectors struck it rich, they were an optimistic bunch. And although few are striking it rich on the Internet, there may be grounds for optimism.

The World Wide Web is becoming the world-wide way to shop. According to a survey by A.C. Nielsen, 6.5 million Canadians are on the Internet and several hundred thousand people have made online purchases. While annual global Web sales have reached an estimated US\$300 million, predictions are that cybersales will reach US\$150 billion by the year 2000 and hit the US\$1 trillion by the year 2010.

What can you buy on the Web? Well, what can you buy in almost any retail outlet? Books, clothes,

shoes, computers, software, CDs, garden supplies. You can even send flowers or order pizzas online (at least in several major urban areas).

But not all companies are looking at the Web as the place to do business. O'Reilly & Associates Online Research found a majority of North American businesses have no immediate plans to obtain Internet access.

"Although Internet activity is healthy and growing in the business community, not all are convinced of its value," the study reports. Only 8 per cent of small businesses (those with fewer than 100 employees) have Internet access, and 79 per cent had no plans to obtain access in the next year.

However, half the 1994 and 1995 Canadian Entrepreneur of the Year nominees said the Internet was "important" to their businesses. And a Decima research survey of 600 attendees of the Canadian National Internet Show found that 91 per cent felt the Internet is

changing the way companies conduct business.

Most companies on the Internet use e-mail to communicate with customers, vendors, and suppliers-saving time and money by avoiding telephone tag or long-distance phone and fax charges. Businesses with Web-savvy clients have increased service levels by setting up Web sites where customers can access answers to frequently asked questions and obtain technical support.

More and more, however, companies are using the Web to supplement traditional sales channels or as their primary sales vehicle.

Don't it make my brown eyes blue?

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Adult-oriented sites were the first to go commercial on the Web. Thousands of blue sites titillate Web surfers with free samples, but lock away the majority of their material, making files available only to those who pay membership fees. Since consumers are hesitant to use credit cards online, some adult sites use 1-900 lines so those interested in prurient material can call in and charge site membership fees by phone.

Speaking of "blue" sites, Labatt Breweries of Canada has supplemented its traditional marketing strategies with its Web site. The site, designed by Toronto-based Cyberplex Interactive Media, doesn't sell beer. It creates brand awareness and "adds value to get people to show up and come back," according to Paul Smith, Labatt director of communication.

Value-added content includes a monthly beer-oriented newsletter, a list of entertainment events "brewing" across Canada, the MVP Club (where registered visitors can accumulate points towards merchandise), and the ever-popular beer recipes. Why beer recipes? Simple. Giving away beer recipes is a "free value that will help sell more beer," explains Smith.

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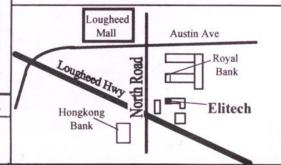
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Banking on the Web

Financial institutions see Web sites as a way of letting customers access

> financial and account information when they want it rather than during traditional banking hours.

> Quadravision Communications, based in Toronto, has helped TD Bank, Canada Trust, Bayshore Trust, and US-based First Federal Bank develop their individual Web presences. In

addition to allowing consumers to access financial information, for example, Bayshore Trust offers fully secured loan transactions on its popular Web site.

> Rather than set up or contract our their own Web sites, many companies have opened shops in cybermalls. The Hudson's Bay Co. has moved into IBM's online mall, World Avenue, where shoppers can buy an array of goods using secure transactions. While George Kosich, pres-

ident of Hudson's Bay, is cautious about overall sales expectations, he has described the Internet as "the next frontier of retail shopping."

If you're a small company that wants to do business on the Internet with the biggies, you should know it's not cheap to join a serious cybermall. Hudson's Bay will pay IBM \$42,000 to join World Avenue and kick in another \$3,500 per month, plus 5 per cent of

But smaller companies will not be squeezed off the Web by corporations, says John Long, Quadravision's president. Larger companies are pushing the technology envelope and once transactional-access security is implemented Web-wide, smaller businesses will find it easier to sell goods and services online

In some instances, they won't have to worry about collecting credit-card numbers, because that will be done by Internet service providers (ISPs).

This should prove to be a boon for small businesses who can't afford the usurious rates Canadian banks want business to pay for credit-card transaction access where card imprints are not acquired. To obtain merchant accounts so they can sell on the Net (or by direct mail), Canadian businesses are required to lock up at least \$10,000 against sales.

While Microsoft, IBM, and Netscape have joined forces with Visa and

MasterCard to create a secure electronic transfer (SET) system for online transactions, other companies are working to act as brokers for shoppers and online retailers. First Virtual Internet Payment System uses a code system representing credit card numbers that retailers can translate to confirm sales.

Other companies have combined their Web site with 1-800 or fax payment systems to win the confidence consumers. And Internet Liquidators, "auctioning" consumer goods on the Web, has set up secure payment methods approved by the Bank of Montreal and MasterCard.

Home on the Web

When it comes to conducting business on the Internet, many homebased entrepreneurs are eschewing high-tech payment methods and relying on good old snail mail.

Fiona Fars created a Web site from which she sells her NetWear clothing creations by mail order. While sales of her T-shirts and sweat shirts with emoticons, e-mail addresses, and URLs silk screened on them have been slow, Fars is not discouraged. The site is hit frequently and word of mouth is starting to build.

As Dean Hopkins, founder of Cyberplex, points out, "The Net has levelled the playing field for small businesses. It puts them on equal footing with every other company-large or small-that has a Web site." Even so, he admits, most companies earning money through Web sales are serving a niche market, usually computer-related.

One of the first online Canadian computer stores to open for business was Onyx Interactive. Onyx browsers simply point and click their way to view hardware, software, new products, and services, and choose their purchases by adding items to a personal "shopping cart."

"There has been a lot of debate whether or not commerce will ever have a place on the Internet," says Onyx president and cofounder Phil DeLeon. "I don't want to sit around debating. I want to lead, not follow."

Software Online Inc., located in Brampton, Ontario, also sells computer software and hardware across Canada and around the world via the Web. The company offers shoppers 20,000 products on its Web site. "Using the Internet will allow us to build a big business, not a big headquarters," says Jon Dearden, a Software Online partner who believes service is more important to Net users than the size of a company's office tower.

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The new reality of conducting business on the Web also includes export opportunities: Dearden has sold software to consumers as far away as the United Kingdom and New Zealand

The world's the limit

"Export opportunities, even if companies are home-based businesses, exist," says Hugh Blaber, vice president, Canadian Exporters Association of Ontario.

Because of free trade and global competition, companies have to be "good enough to stand up in the world market, not just compete in their own back yard." And since they have to be globally competitive to survive in their local market, Blaber suggests they look at exporting as a means to expand their business, especially if they have developed niche product or service expertise.

But exports will not occur just because a company has e-mail and is able to set up a Web site, Blaber cautions. "High-tech is a help, but it's not a substitute for building relationships and understanding cultures."

Toronto's On Trac Inc. has created a Web site to help smaller businesses establish the relationships to which Blaber refers.

"Many Canadian products and services don't reach foreign markets because Canadian companies are not trade ready," says David Sadleir, On Trac president.

So while the online gold may thus far belong primarily to adult sites and larger corporations, smaller prospectors are enthusiastically staking their claims on the Web and optimistically panning for their share of the online gold available in them there cyberhills. •

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ANDREW COCHRAN

By CHRISTOPHER GULY . .



"To some extent. we are today with the Internet where we were in the 1950s with television," says Andrew Cochran over the telephone from his Halifax office.

With the advent of television, something like 15 per cent of households owned a TV set. Today, about 15 per cent use the Internet, at least in North America. In the 1950s, people would huddle around a television set and watch the test pattern. Today, people are trying to figure out the menu bar on an Internet site."

That's about the place where Cochran found himself in the late 1980s when he bought his first Apple II computer. "I was completely enthralled with the idea that I had 48K and was excited when I could buy a disk drive to plug into it."

Accidents will happen

In less than a decade, Cochran has unwittingly become one of the computer industry's leading innovators. As head of Cochran Entertainment and Cochran Interactive, the 44-year-old son of two former Nova Scotia Tory cabinet ministers, John and Maxine (who was the province's first female cabinet minister), is both a beneficiary of television's sociocultural position and a pioneer of the Net's growing influence in the lives of Canadians.

Maclean's has called him a "cyber-visionary"—a term at which the softspoken Halifax native bristles. Although he has become a Net educator, with his second, 13-part series on the medium (Life on the Internet) set for broadcast on Canada's Discovery Channel and PBS in the United States this fall, Cochran is essentially a pragmatist.

After working as executive producer of CTV's Canada A.M. and the CTV National News, Cochran jumped into children's television programming, and began churning out episodes of the hit CBC-TV series Theodore Tugboat in 1988.

Witnessing the growing popularity of the Net six years later, the 26-year television veteran made Tugboat his first WWW experiment. While conventional television viewers can eagerly await another 30 episodes of the program-seen in 58 countries-Net crawlers can visit Theodore Tugboat at its own WWW site. There, users can visit Barrington Barge or the Big Ship in The Big Harbour, or download a line-drawing colouring book.

Branching out

Today, Tugboat has been listed as one of the Net's best sites for kids-including Cochran's 10-year-old son, William. But as the TV series found a home internationally, the cyber version of Theodore Tugboat has spawned other

Two years ago, Cochran asked one of his colleagues, Berit Erickson, a former librarian, to help create a list of recommended Net sites for kids that would appear on Cochran's home page (http:// www.cochran.com/), which features 15 sites.

"I did a search using Alta Vista and found there were about 2,000 sites linked to the Theodore Tugboat home page," says Cochran, who also serves as a writer for the series. "But an equal, if not greater number, were linked to Berit's Best Sites for Kids.'

Bringing television to the Net (& vice versa)

In just a couple of years, the Net has become Cochran's best marketing toolexponentially linking him across the WWW and offering glimpses of his television product in markets where the programs aren't

Start making cents

Witness the Cochran Entertainment-produced, youth-consumer CBC-TV series, Street Cents. It, too, figures in Cochran Interactive's stable, in the guise of a youth-consumer database.

"With Web sites, particularly those related to the television industry, you don't presume prior knowledge of the program," explains Cochran. "So someone in Greece, South America, or Australia who has no idea what Street Cents, the TV program, is all about-not to mention not being able to watch it-can

still derive some fun, if not usefulness, from

Clearly, the best part of Cochran's successful marriage of television and the Net has been that none of it was planned. In a moment of creative passion, the two eloped. The more established television partner succumbed to the Net's seduction. Although Cochran eagerly blessed the union, he understands the Net is no mindless bride.

"It is really an organism that is growing so continued on page 22

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is, online gambling is a quasi-legal business and is unregulated at this time. It's so new that it is a gray area at best-the FBI, IRS, and Justice Department in the United States are hesitant to confirm whether Internet gamblers are breaking the law.

Know when to fold 'em. Gambling on the Net

By MARC SALTZMAN

here is no doubt the Net is littered with the ills of society just as television. books, movies, magazines, and videos continue to sensationalize and exploit the perils of urban life, and all should be accessed with discretion. But there is now a new potential danger emerging on the World Wide Web. It is now

very own desktop. Just think about that for a moment. You can now win or lose money by betting on sports, or playing blackjack, poker, or even bingo, as if you were in Vegas-but without even leaving your den or office chair!

possible for any Web surfer to take part in

real-time, online gambling right from their

The overwhelming majority of the thousand-or-so Web sites dedicated to gambling as yet offer only hints, tips, and strategies for real gambling or sports betting. They can either teach you player's secrets (such as card-counting) or provide up-to-theminute scores and statistics.

The Web sites raising questions are the offshore gambling sites, where you give them your credit-card number or set up an electronic debit account. For the most part, these potentially chancy sites are established in places such as Belize, Liechtenstein, or Nassau. They can be quite hard to come by and rely heavily on word-

I have seen inquiries on a gambling newsgroup from a person who felt ripped off by one such organization, but he was reluctant to approach his local authorities. The truth



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They also admit that nothing is being done about it.

Florida Attorney General Bob Butterworth states that "evolving technology appears to be far outstripping the ability of government to regulate gambling activities on the Internet and of law enforcement to enforce such regulations."



Canadian officials have been even more reluctant to confirm online gambling's legality.

Funny money

Some American companies, such as the Casino Royale/Funscape Web site, have blurred the issue by offering to trade their "virtual dollars" for real cash. The player pays to set up an account and receives "FunBucks," where 100 FunBucks equal US\$1. When cashing out of your account, you may exchange your cyber game tokens for real American currency.

The most popular forms of gambling online to date are run from native reserves. US Congress passed the Indian Gaming Regulatory Act in 1988 and opened the door for Proxy Play-legalized bingo and

What was his name, oh?

Try your luck with free gaming Web sites such as The Bingo Zone at http://www.bingozone.com/ It is not gambling-you have nothing to lose-but you can win money every game. They can afford to do this because they pay out from their advertisement support (which is similar to how game shows work). Games start every half-hour, and win-

lotto gambling for players over 18 that are not directly present on native land. Gamblers are allowed to participate by mail, telephone, TV, and now the Net, but you must open an appropriate debit account.

nings are mailed to your house within

Think about it

five business days!

I have to admit it is scary to see online gambling grow, but the bottom line is, is it really safe to trust a computer to tell you that you've won money and expect it will

be wired to your account? The answer is no, and I suggest you avoid all Web sites that promise you otherwise.

Better to save for a weekend excursion (to a place where gambling is legal), because there's really nothing like being there-and seeing for yourself if you have won or lost. Use the Web as an educational tool, perhaps to brush up your poker game or peruse who's playing where in Vegas (did someone say Wayne Newton?).

For more information about this as-yet shadowy subject, point your browser to The American Gaming Network or the resource-full Rolling Good Times maga-



continued from page 17

fast that I defy anyone who can come up with a cogent three-year business plan based on it.'

Nevertheless, he predicts the pair will remain together in the future. "I hear a lot of people saying the Web will replace television, but I don't share that view," says Cochran. "What I see happening is that you will be searching the Web while watching Seinfeld or the news. I think the Internet is the great equalizer, not the great threat, just like television was in its early days when people said it would replace radio. The Internet is not going to erase television from the leisure-time landscape. Nor is it going to replace movies."

Cochran also predicts the Net could force other mediums, such as TV, to improve their own performance. "The Internet can become a related resource for television, where facts are raised on a show and you can go to the Net and find out a whole bunch of extra stuff. The Internet, in a sense, has infinite shelf space. The two can make good companions."

The Net has even figured in Cochran's own marital situation. His wife of 12 years, Brenda, writes pharmacy-related consumer information for the PharmaSave drugstore chain that now appears on the Net. Says Cochran sheepishly, "(Cochran Interactive) designed the Web site." •

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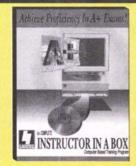
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PGP: Encryption for the masses

Last year marked another huge increase in the market share of notebook computers versus the traditional desktop models. With more and more people using notebooks, there is also a widespread increase in the level of unease about the data stored on them. Hard drives full of sensitive information, once safely locked in offices, are now being carried in taxis, subways, and airplanes.

By LAWRENCE BARICHELLO



hat if the notebook is lost or stolen? While backing up data ensures that contracts, correspondence, databases, and spreadsheets will not be permanently lost, extremely sensitive data is still out there somewhere on the hard drive of a missing computer. If the information falls into the

hands of a thief or even an innocent secondhand notebook purchaser, your privacy, and that of your business clients, has been severely compromised, the results of which are potentially disastrous.

Whether you own a notebook, or are just generally concerned about data privacy, you should know that there are now tools available to address this problem. Encryption converts the contents of any file to a seemingly random jumble of zeros and ones. It works using sophisticated mathematics that are beyond the scope of this article, but rest assured, reliable encryption software really works.

The relevance of this is astoundingthis is the first time in human history that the public has tools to ensure privacy that are stronger than the tools used by governments to invade it.

Be good

If you are interested in encryption for your business or personal use, I strongly recommend that you use one of the two manifestations of Philip Zimmermann's Pretty Good Privacy (PGP), for several reasons

It has many features not available in other applications, it has been extensively peer reviewed and is widely known to be unbreakable, and it is the de facto world standard. If that doesn't turn your head, you should also know that a freeware version is available on the Internet.

PGP not only allows you to use a pass phrase to encrypt and decrypt files on your own PC. Mac. or Internet account, but it also allows you to give a "public" password (or "key") to others that can be used to encrypt files for e-mail that only you, with your associated "private" password, can decrypt. Not even the public password can be used to bring back the encrypted file.

These public keys have "fingerprints" that allow them to be verified by their owners easily over the phone, mail, or fax. PGP also allows you to electronically sign a file, be it encrypted or not, in order that the recipient is sure that it came from you. At the other end, PGP checks the integrity of the signature to ensure that neither it nor the file attached to it has been tampered with.

You can also encrypt a single message say, a confidential memo-to a number of public keys at once. The software uses "key rings" that keep records of public and private keys and electronic signatures. PGP even has a "wipeout" feature that deletes the original, unencrypted file, and writes over it and all the temporary files generated by PGP in order to encrypt it.

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Feature

Packing it in

In the bargain, PGP compresses files (although not quite as efficiently as dedicated compression software like PKZIP). PGP can be used with ASCII (important for e-mail) or binary files.

This software is not without a few disadvantages. It won't do multiple-file backups like Fastback, MSbackup, or even PKZIP. And in the future, I'd personally like to see PGP running as a shell around my favourite word processors, databases, or spreadsheets, and doing encryption on the fly, so that all of my files will be constantly backed up.

The password protection built into packages like Word, WordPerfect, Lotus 1-2-3, MSbackup, PKZIP, and the like, is easily broken, by the way, and should never be considered even remotely safe. True encryption is export-restricted-the US government does not allow the software to leave the country legally (with the inexplicable exception of Canada), considering it "munitions." Mainstream software makers would have the headache of making two versions of their applications, one for Canadian/US distribution, and another for the rest of the world.

Having a copy of PGP does not mean that your security is put to bed and you can just relax and forget about it. The software is only good if you use it regularly, and even then there are other ways that security can fail. A "shoulder surfer" might oversee a password while it is being entered, for example. Or original files may not be completely deleted, leaving hidden copies. This can occur on hard drives and on diskettes sent through the mail, so always use a utility to overwrite the original files (not just mark their sectors for re-use) and to chase after all those temporary files created by wordprocessors and other applications.

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RECOMMENDED READING The Computer Privacy Handbook, by Andre Bacard, from Peachpit Press. 1995.

Privacy For Sale (How Computerization Has Made Everyone's Private Life an Open Secret),

by Jeffrey Rothfeder,

from Simon & Shuster. 1992.

WHERE TO GET PGP

ViaCrypt, 9033 North 24th Ave., Phoenix,

AZ 85021-2847

Phone: 1-800-536-2664

E-mail: viacrypt@acm.org FTP: //net-dist.mit.edu/pub/pgp

The Norton package has one such feature, as do other utilities.

Spy networks?

By far the most serious security threat left after you have read and applied the above is exposure on multiuser systems. like those used in corporations or firms using LANs, where you log on to a network. Anything written or received by

internal or Internet e-mail is recorded by those systems and is the property of the system's owners. Passwords are meaningless, and an individual cannot really delete or wipe anything from such a system. That is the privilege of the sysop and management.

Anything private that needs to be held on a network should be encrypted at home first and transferred via diskette. The file can be stored there or e-mailed, and while the owner of the system will have a copy of it, without the password it will be indecipherable.

If you follow some basic protocols in dealing with sensitive or personal data, you can at least achieve privacy that's "pretty

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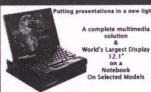
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ireless data communication shaky, but promising

• • By PAUL LIMA • •

BIS Strategic Decisions, a technologyresearch firm, counts over a half-million wireless data users in North America today and estimates the figure will surpass 10 million by the turn of the century. Although a concluded that cellular modems are neither as reliable nor as fast as land-based modems, more people than ever are using portable computers, cellular-compatible PC cards, and data-transmission-compatible cellular phones to make wireless connections to the Internet or corporate networks, and to send faxes around the world.

To become an effective road warrior, your

cellular phone must be capable of data transmission, your notebook must accept PC cards, and both your PC card and your cellular phone must be capable of wireless fax or data transmissions. Users experience problems because wireless data communication merges several types of technology while transmitting information over a cellular network with fluctuating signals.

"Connecting the notebook, PC card, and cellular phone is not yet a simple plug-andplay activity," says Brian Greenspan, marketing director or Toronto-based WAM Interactive. WAM sells notebooks and modems that are cellular ready, and more.

"As a value-added reseller, we make and test the connections and set up initialization strings so clients can use their technology."

However, John Whiteford, Nokia's business development manager, promises digital cellular networks and plug-and-play technology will make a significant difference. He points out that Nokia cellular data-card drivers are already resident in Windows 95, just waiting for users to hook up their Nokia handsets and PC cards and transmit.

Look, Ma, no wires

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Armed with a Toshiba notebook, a Nokia cellular phone, a Megahertz Gold Series fax/data modem, Delrina's Communication Suite 2.1 (WinComm PRO 1.1 and WinFax PRO 4), and Bell Mobility's cellular phone service, I was able to transmit faxes and data by connecting my modem into a land-line jack in my home office.

When it came time to try cellular transmissions, I first "flashed" the modem to upgrade it from land line to cellular. Because you don't have a dial tone when you turn on your cell phone, the flash fools the modem into thinking one is there.

Then I had to figure out which initialization strings to use in the communication software so the software, modem, computer, and phone would all communicate with each other. Once that was done-and it required help from the Megahertz and Nokia tech-support folks-I was able to send and receive faxes and to connect to CompuServe to send and retrieve e-mail. Sort of.

I say "sort of" because, evidently, I live in a grev area between two Bell Mobility cell sites and my signal strength fluctuated during the tests. Several times the fluctuating signals kicked me out of CompuServe as I was downloading messages. And I was seldom able to send more than one or two fax pages before losing the connection.

It was frustrating not being able to transmit faxes from the notebook to my PC a few feet away. Part of my problem is that my PC modem uses MNP5 error correction and the Megahertz modem uses the more advanced MNP10 error correction. That means my PC was not as forgiving of transmission errors as the PC card asked it to be.

I also had a brief demonstration of the Compaq SpeedPaq 192 cellular data/fax modem. Like the Megahertz modem, the SpeedPaq supports MNP10 error correction. It also supports ETC error correction, compatible with cellular data network error correction, for more reliable transmission.

A real blessing, Compaq's nifty Modem Advisor selected the appropriate initialized string, error correction, and data compression modes for the phone and software. But Compaq also lets technophiles edit the fields to override preselected strings.

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Feature

Getting personal

Overall, the system worked well enough so that I could see the potential for using cellular to keep in touch by means other than voice. And Personal Communications Services (PCS), the next generation of cellular communications, should make wireless data and faxing communications more reliable. Running on fully digital networks, PCS will be coming to major urban centres in North America over the next two years.

Once all the bugs are worked out, "vou'll be able to do (by wireless) what you normally do when tied to the desk-only you will be able to do it, and more, anywhere, anytime," says Whiteford. •



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PC vs. console: The gamer's lowdown

If you're a computer gamer, there appears to be one cardinal rule: get all you can afford!

• • By MARC SALTZMAN • •

Over the years, people have asked: "Is the PC better for games or should I just buy a gaming console for my TV?" I've always tried to evade the question. But now that my back is pinned up against the wall by my editor, I will attempt to objectively approach a comparison by analyzing the hardware, software, affordability, and versatility of each.

First off, I concede that dumping all gaming consoles into one category and all PCs into the other is not only unfair, but completely assinine as well. However, as a happy medium, I will be referring to the popular Sony Playstation and the Sega Saturn as default consoles. I acknowledge that there are other preferred systems (like the Jaguar, Panasonic's 3DO, and Nintendo's 32bit Virtual Boy), but space is limited.

For computers, I will only consider PCs (not Macs or Amigas) with a Pentium 100 CPU and 16 MB RAM as admirable gamingcomputer models.

Ouarter suckers

Gaming consoles have come a long way from the side-scrolling, coin-collecting Marios and Sonics of the late 1980s and early 1990s. Even up until the middle of this decade, Nintendo and Sega were still vying for household gaming supremacy. Then came the refreshing Sony Playstation, which debuted in September 1995 and excelled in many areas over its competitors, most notably in 3-D graphics.

The Sony Playstation uses a Sony CPU, a 32-bit processor that runs at 33 MHz. Part of the chip's memory itself is allocated to graphic performance (as opposed to that for the Sega Saturn). Compare this, if you will, to our token PC, which contains the 64-bit Intel Pentium chip where 256 KB cache is often shipped along for an increased kick.

Don't be misled, however; comparing one CPU to another can be tricky, because both are created to heighten different aspects of the gaming experience. Where the Pentium chip may be somewhat faster, the Sony CPU still has a preferred 3-component graphic subsystem that gives the Playstation the edge over the PC in 3-D graphic quality and image

The big difference in hardware between PCs and consoles is that the consoles come with only 2 MB system RAM (non-upgradeable), versus the usual 16 MB with most new Pentium systems. With RAM prices dropping like they have

been since the spring, you can even get an additional 16 MB for as low as \$120.

How do I look?

When analyzing how these games actually look to the player, I have to admit I am caught between size and quality. I would be lying if I said I wouldn't love to play my favourite PC games, in bed, looking at a huge 35-inch television. Although TVs are bigger than the standard 14- to 17-inch monitor, the image quality is sacrificed due to the TV's restrictions.

Most computer monitors are high-resolution and non-interlaced, as opposed to the low resolution, interlaced display of standard televi-

The last three major hardware aspects in question are CD-ROM speed, sound, and joysticks. The CD-ROM data rate for both the Saturn and Playstation is 300 KB per second-comparable to a dual-speed PC CD-ROM (and most Pentium systems ship with 6X or 8X speed CD-ROM these days).

For sound, I have a hard time choosing which gaming platform was better, but I would have to say game consoles (namely the Playstation) come out on top. The PC uses either a wavetable card or FM synthesis, found in the Playstation and Saturn respectively. Most games released now for the PC utilize 16-bit sound, but you can purchase add-on cards to up the sound performance including the AWE

32 SoundBlaster card (I swear by it, personally). Stickhandling

> Lastly, the Saturn comes equipped with the standard

plastic gamepad, but the Playstation's ergonomically designed controller is great for action games. The PC, however, has more variety in peripherals than either system, whether your preference is single use or multiplayer action (including VR headsets, throttle and rudder sticks, guns, and various track balls).

Before I purchased my Pentium, I would have said that games that appeared lightning fast on a Sega or the Playstation were choppy (on a 486) or absolutely sluggish (on a 386) when played on the PC. But the increasingly affordable Pentium systems now hold their own, and then some (how about a little Duke Nukem 3D in high-rez 600 x 800 mode!).

Even graphically, where PCs have taken a back seat to consoles, the newest hype in gaming for the PC is 3-D acceleration boards from companies such as Matrox. Creative

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Labs, and Diamond. These promise to rival or even exceed the performance of the Playstation.

Caution: games crossing

The comparison of actual gaming products for the PC versus other gaming systems is interesting, since many games are now crossing over into each other's platform. Doom, X-Com, and Panzer General were on PC first and then moved over to game systems. Ecco the Dolphin, Earthworm Jim, and Comix Zone were on Sega first, and were recoded for PC release.

Road and Track's The Need for Speed and NHL Hockey '96 had a simultaneous release on all platforms, as do most Electronic Arts sports

I would have to say that at this point in time, sports and action titles on the gaming consoles (namely the Playstation) outperform the same games on the PC. Computers, though, are so much more versatile overall, and many other genres of games (such as role-playing, strategy, war, adventure, simulation, and puzzle games) are much better on the PC.

Furthermore, with the potential of many more toys to add on to PCs (notwithstanding memory additions such as cheaper RAM and 3-D accelerator cards), I would put my money on PCs in all genres for the near future.

The bottom line pops up

But the advantages in price and simplicity these gaming consoles have over the PCs is hard to refute. A Sega Saturn or Sony Playstation will run you approximately \$300, whereas computers are still five to ten times that price (often depending on your monitor size). We must acknowledge, of course that computers offer so much more than just games (i.e., word processing, Internet access,

personal and business management, multimedia reference or educational products, other

The price of game CD-ROMs are very similar between our competitors, and you can also rent them both.

Finally, there is head-to-head gaming for both the PC and for the Saturn (including the Sega Channel or just one phone to another), but it is better for the PC at this point due to different means of interactive gaming (via the head-to-head modem play, PC-to-PC direct link, networking, and now World Wide Web play with titles such as Monopoly and Spycraft: The Great Game). And there are many more titles for the PC than for all the platforms put together-plus, with the PC, you can download or play online thousands (and I mean thousands) of free shareware, freeware, Java, or Shockwave games from all over the globe.

So, in the end, the dollar is king. If you're itchin' for a easy-to-use sports or action gaming system, and you only have a few hundred dollars, I suggest you pick up the Sony Playstation.

But for a true, versatile gaming experience, I have to stick with the good of PC. Despite the large price difference now, I feel computers have a very strong future in the world of gaming, and I anticipate the emergence of more 3-D rendered environments with the aid of these new accelerator cards on the

Moreover, interactive World Wide Web games are becoming more and more exciting, as full-motion video and other animation plug-ins become readily accessible to all Internet browsers.

So if you are as serious about gaming as I am, save your hard-earned coin, and pick up (or upgrade to) a higher-end Pentium PC. It's definitely worth it.

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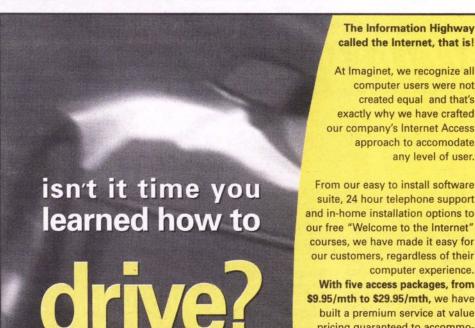
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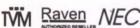
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• • By GREG SALMAN • •

The process of designing and making video games has largely been a mystery that all game players wonder and dream about. Now there's a comprehensive postsecondary school that offers a unique curriculum in just that esoteric field. Founded in 1994, DigiPen is North America's first school that specializes in taking students who have some background in art and computers and turning them into bona fide video-game designers.

The school's founder, Claude Comair, came up with the idea after trying to start a software-design studio, only to find that there was a terrible dearth of talent. Comair approached Nintendo, the megacorp that controls almost half the video-game market, about the possibility of developing a training school. Nintendo's response was enthusiastic and now the company sponsors the college with hardware, technical support, and financial aid, allowing the tuition to be a manageable \$9,500.

DigiPen's students currently work on Macs and programming kits provided by Nintendo that are the same as those used by Nintendo's programmers-for it's older generation of games. There are plans in the near future to update the hardware and software to be compatible with the 64-bit generation of machines that debuted on the market this

String-free

Both DigiPen and Nintendo are quick to point out that the school is run as an independent organization, and Nintendo neither promises nor obliges students to come work for the company. The school's initial year was so successful, however, that several students have, in fact, already been lured out of the two-year program to come work for Nintendo and other companies full-time

The campus is made up of several offices in a building in downtown Vancouver. The entire student body is made up of only 60 people, allowing for very intense, one-onone study. Students come from all over the world. Currently most are from the United States, but many are from Canada, Japan, Korea, and other distant places.

There are six teachers, all of whom have hands-on experience in the field. Comair runs the school and still manages to find the time to teach classes. The program of study consists of 12 semesters over two years, with a minimum of 5,000 hours of class-

This keeps the school operating six days a week over 11 months out of the year. It's a grueling schedule. What's more, there's homework. And as if that wasn't enough, most students also choose to pursue their

own projects as a kind of "after-school" activity. This can keep them in the classrooms 13 hours a day, six days a week. And they love it. It's a school for workaholic nerds.

No "borrowing"

School work consists of everything from project planning, story boarding, basic game creation, computer math, C++ programming, and music programming to computer environments and the principles of computer graphics. Students are also taught game concepts, and a strict ethical code; there'll be no tolerance of copyright infringement at DigiPen.

The students work in teams on several projects at the same time. This is to encourage team spirit and simulate the working conditions in the industry. There really aren't "lone-wolf" designers working in their garages writing brilliant games for Nintendo anymore. Work is handled by groups of designers on a per-project basis, so students have to be prepared to organize their energies in an appropriate manner to allow them to cooperate on a game for a period of six or ten months.

Before they graduate the students will have had the opportunity to work many different kinds of games, as well as head their own project.

DigiPen is registered with the Private Post-Secondary Education Commission of British Columbia, and offers a diploma in video game programming. The school's initial years have been so successful that there is a waiting list for the 60 spaces well into the year 2000.

Unemployment: 0%?

And there'll be no shortage of work for the graduates. The video-game industry, which had some US\$5 billion in sales in 1995, shows no signs of letting up anytime soon, with new systems and new technology constantly being thrust into the market.

DigiPen now also offers a second course of study in 3-D animation. This program is smaller, consisting of only 24 students, but is just as intense, and offers the same employment opportunities in this growing industry.

Comair's school may have started a trend. Already, several other institutions are planning to offer video-game design courses. You can get a degree in medieval literature, but will that get you a job? Why not a bachelor's in video-game design?" says Comiar, and many pedagogues seem to agree with

Leaders in the industry are particularity thrilled. Until now, game-design companies have had to depend on self-taught enthusiasts for a talent pool or on training promising candidates in-house. Now, they will have their pick of the crop. •

For more info, visit http://www.digipen.com/ to view samples of the student's work and get all the latest school info.

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THERE AND BACK AGAIN... HOW YOUR DATA TRAVELS ON THE NET (ON A GOOD DAY)

• • By Alan Zisman • •



When Bilbo Baggins, returned from his adventures, he called the story of his adventures (since reprinted as "The Hobbit") 'There and Back Again". When you're looking at a

Web page, on the Internet, perhaps a continent or two away, the data you're accessing could tell (if data could talk or write!) a tale of a similarly involved journey.

How Internet data, whether a Web page or an e-mail message gets from here to there is a mysterious-seeming process-but understanding it helps to make sense of other mysteries, like who really pays for the Net, and why your connection sometimes seems so slow.

Let's see what really happens when I, in Vancouver, using my modem at home or at work, try to connect up to a Web page ... say Time Magazine's Pathfinder site, in New York City. First, using my modem, I connect to a local Internet Service Provider... one of over 2,300 such services in North America. My modem tries to get a connection at its maximum rate, 28,800 bits per second, but depending on the amount of noise on the phone lines, will often end up settling for a slower connection.

At the Service Provider, I connect to another modem, which is connected to a computer, connected to a local area network-connecting the ISP's bank of computers, modems, and phone lines. There's one modem per phone line-and sometimes all the lines are in use. If I don't get a busy signal, I'm connected to the ISP's Ethernet network connecting all their computers at a rate of 10 million bits per second (Mbps... about 300 times faster than the modem connection). I can check my e-mail or Usenet news groups-in both cases, looking at messages stored on my ISP's network. But to send mail, or use the Web, I've got to go out from my ISP-over the Internet itself.

The Internet is a network of networks. Regardless what sorts of computers they are, they transmit data by a common codefor Transmission Control Protocol/Internet Protocol. The TCP part describes how data is broken down into small pieces called packets... each packet is transmitted separately, mixed with other data-and sometimes travelling along different routes. At the end, it's all reassembled. hopefully in the correct order. If a packet is missing or corrupted, TCP will request it

The IP part gives every data packet its Internet address... a 12-digit number that corresponds to the more human-friendly

address that you or I typed. (I know, Internet addresses like http://www.tcp.com doesn't seem that friendly, but try to remember 167.191.045.001 instead). One of the computers at my ISP is the Domain Name Serverstoring a large table that translates the Internet address that I typed into its (hopefully) proper numerical equivalent.

To get out to the Internet, my ISP rents a dedicated T1 connection, running at 1.54 Mbps, connecting to a larger, regional ISP. From there, my TCP/IP packets go through a router-a sort of dedicated computer that does nothing but try and figure out the most efficient route to get the data to its destination. From Vancouver, on its way to New York, the data may go via Seattle, or down to Sacramento, travelling along a 45 Mbps T3 connection owned by MCI. Not only is data being exchanged however... despite our sense that the Internet is free, each of these data transmissions is being paid for, as the various Service Providers rent their access from larger companies such as MCI.

While the T3 line sounds massive, much of the so-called backbone-the main transmission route, is overloaded. MCI is currently replacing it with fibre-optic cable capable of 622 Mbps. Moving on the backbone, my data, mixed with packets from thousands of other users on hundreds of other ISPs, may pass through routers in Denver and Kansas

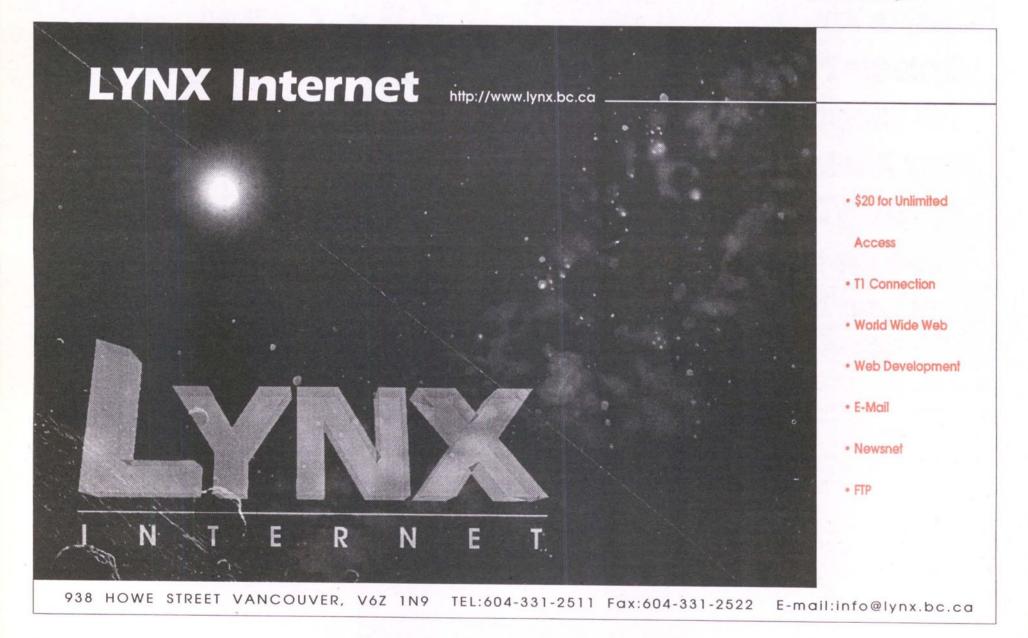
City, on its way to New York. There, it passes through a series of progressively smaller Service Providers, on its way to its destination, at Time-Warner's Pathfinder Web site.

(From there, the data needs to get back to me-the same process, though perhaps a different route, in reverse).

Amazingly, this complex process works correctly most of the time. And while there are sometimes bottlenecks along the way (gridlock on the Information Superhighway, if you'll excuse the cliché), most of the traffic problems occur at the destination. Sites like Pathfinder are quite popular, and if several thousand people are all trying to access it at once, it can take a while to connect.

The Web is designed to try to minimize this, however... when I'm reading that Time Magazine article, I'm not actually connected to their site-Web browsers are only actually connected for the few seconds when they are sending or receiving data. Many people can be reading data from a site, taking turns connecting, before performance starts to degrade.

You can see the route your data takes, using the Traceroute utility. Search for 'traceroute' at a search engine like AltaVista (http://www.altavista.digital.com/), to get links to Web sites with this program, which will show you the journey your data takes from There and Back Again.



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APPROACHING M E R L I N

• • By Bruce Byfield • •

The Nine Lives of OS/2

Rumours of the death of OS/2 circulate every few months. Few of these rumours, however, have received as much attention as William Zachmann's comments on his Canopus forum on Compuserve.

Zachman admits that he has doubted IBM's committment to OS/2 for months. After attending the IBM IT Analyst's Conference in Toronto on August 7-9, he concluded that "IBM's top management has already written off OS/2 as a dead (or at least dying) duck). Lou Gerstner and his top executives are, without exception, far more committed to Windows NT than they are to OS/2." He would be switching to Windows 95, he added.

Zachmann's comments carry weight. The President of Canopus Research, a computer and communications consulting firm, Zachmann had been one of the few major computer journalists to write knowledgably about OS/2. Many considered him an OS/2 advocate.

Zachmann, however, sees himself as devoted to truth, rather than to a company or product. IBM, he believes, would abandon OS/2 immediately if it wasn't used by major clients. Instead, he claims, IBM has reduced the budget for developing and promoting OS/2 so that its install base will slowly wither.

PCWeek on-line was quick to report Zachmann's comments. As I write, it has yet to report IBM's response. In a letter to PCWeek which has already been widely circulated on the internet, John W. Thompson, General Manager of Personal Software Products, the IBM division responsible for OS/2, insists, "IBM is completely committed to the OS/2 Warp family of products. OS/2 has become a cornerstone in our overall family of software products... Customers and readers should erase any doubts."

Net pundits were quick to point out other information which contradicts Zachmann's conclusions. Given IBM's usual licensing agreement, the upcoming release of Warp 4.0, codenamed Merlin, obligates IBM to support the product for two years-a long time in terms of software development. Moreover, OS/2 and related products produced over a billion dollars of revenue for IBM, and development of IBM software is still continuing. For example, on August 29, Logica, Inc., a major systems integration and software firm. signed a multi-million dollar contract with the IBM-owned Lotus Corporation to help develop the OS/2 Smartsuite. IBM is also including Voice Type Dictation as an extra in Merlin, while charging over \$800 for the Windows 95 version of the same product.

Zachmann's observations that IBM is focusing on Windows NT development seems correct. And no wonder: NT has been one of 1996's most discussed products, and IBM previously had little software for it. But IBM has long been committed to developing for all platforms—a conservative strategy which makes minimizes risk for shareholders.

IBM will never support OS/2 exclusively, so the rumours of its death will continue. On the other hand, IBM seems to regard OS/2 as a small but valued part of its corporate strategy. In particular, IBM seems to regard OS/2 as a major source of software innovation. With 32 bit programs appearing on every platform, OS/2 should survive for a few years yet.

Merlin Release Announced

The release of OS/2 Warp version 4.0, codenamed Merlin, will be announced on September 25 in San Francisco. The software is expected to be in stores by September 28.

Merlin, which has been in beta-testing since July, may be the most effective answer to Zachmann's claim. Besides a redesigned interface, Merlin includes a number of enhancements, including support for True Type fonts, Plug and Play, and Voice Type Dictation. It will also be the first operating system to support Java applets and OpenDoc, while its Open32 API extensions will make it easier for developers to port 32 bit Windows programs to OS/2. There is also an unconfirmed rumour of enhanced Win-OS/2 support.

Merlin will also ship with a CD of hardware drivers, and several hundred megabytes of bonus pack applications. The bonus pack will include Lotus Notes Mail 4.0 as Merlin's internet e-mail client. The rest of the bonus pack is still unannounced, but is rumoured to include a demo version of a CD-burner.

Merlin's announced price is \$299US for the full package, but Indelible Blue, the OS/2 mail order company, is taking reservations for upgrade editions for \$115US. Canadian prices are still unannounced.

Netscape for OS/2

The rumours have been flying for months. On August 28th, the long-awaited announcement finally came: Netscape will develop OS/2 versions of its popular Internet browser.

"This announcement represents an important strategic agreement for both Netscape and IBM," James Barksdale, the president and CEO of Netscape commented. "OS/2 is an operating system that many corporate MIS managers count on today."

The deal means that versions of Netscape will soon exist for seventeen different operating platforms. It also means that development will cease on IBM's own WebExplorer.

The announcement was anticipated as early as July 23rd, when John W. Thompson of IBM Personal Software Products mentioned while talking in Wellington New Zealand that Merlin would ship with a version of Netscape.

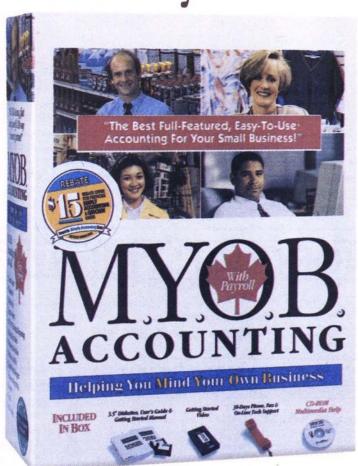
This report, widely circulated on the internet, was bolstered by David Moskowitz, a long-time writer on OS/2, who was quoted as saying that the deal had been signed on May 7th. However, neither IBM nor Netscape would confirm the deal until now.

Netscape 2.02 will be immediately ported to OS/2 through the Open32 API extensions. It will not only be comparable to versions of Netscape on other platforms, but also support such features of Merlin as Voice Type Dictation.

The next version will be developed entirely within OS/2. As I write, Netscape is advertising on the internet for developers for the next version.

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UNDERSTANDING YOUR GRAMMAR CHECKER

By LUCIA ENGKENT • •

then my brother was in school, he said he didn't have to learn how to spell because his secretary would correct his errors. Today's students are more likely to say their computer will make the corrections.

Yet, this faith in the writing skills of an electronic machine is misplaced. In fact, if you're not sure of your grammar rules, checkers can do more harm than good.

If you're like most computer users, you weren't taught formal grammar in school. So it's not surprising if you are bewildered when checkers flag a "comma splice" or the "passive voice."

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cryptic suggestions; they include explanations, definitions, and examples. Just as most computer users do not read their manuals from cover to cover, however, they also do not read all the information in their grammar checker.

Preaching to the choir

And those who do tackle all the explanations may not find enlightenment. Computer wizards seem to be the only people who understand manuals, and grammarians may be the only ones who understand grammar checkers.

But knowing how the programs work and what they commonly flag can help you use your spelling and grammar checkers effectively.

Spell checkers check every word against the list in their dictionary. They work especially well for finding typographical errors. But they won't catch incorrect use of homonyms (words that sound the same), such as "break" and "brake." They also won't help you catch misspellings in proper names. Documents still must be proofread.

Don't go changin'

Spell checkers are shipped with US or UK dictionaries, while Canadian spelling lies somewhere in between the two standards. You can get away with either "centre" and "center" in Canada, but stick with whatever word you choose. Many institutions have a list of preferred spellings that you can use as a guideline.

The most identifiable spell-checkerinduced error is "allot" for "a lot." If you spell "a lot" as one word, the computer does not offer the two-word correction; instead, it suggests "allot." Some people just accept the suggestion without realizing that "allot" is actually a completely differ-

Grammar checkers can sometimes find spelling errors that spell checkers on their own miss. For example, a grammar checker might catch "it's" for "its."

Grammar checkers try to analyze sentences and identify subjects, verbs, and objects. Sometimes their analysis is dead wrong. For example, one checker looked at the phrase "golf balls" and assumed that "golf" was a verb.

Some checkers point out confusing pairs of words. If you use a word like "effect," it will flag the word to ask if you really want to use "affect." This is confusing, even for skilled writers. It lets doubt creep into your mind

The grammar checker cannot tell you which word is right for your sentence. Your only recourse, if you're not sure, is to use a dictionary-a good one, with complete definitions, usage notes, and example sentences

Stay active

Many checkers admonish you when you use the passive voice. In the active voice, the grammatical subject does the action, while the subject is acted upon in a passive sentence. It's the difference between the active "We offer consulting services" and the passive "Consulting services are offered."

Active sentences are easier to read and understand, and they move your prose along, so it is better to use the active voice. But that does not mean that the passive is wrong. Sometimes, it is useful, especially when you want to de-emphasize the doer of the action.

Politically-correct grammar checkers may question your use of the word "man." Do you want to use a gender-neutral term like "human being"? Sometimes these suggestions are ludicrous, but they can be consciousness raising.

Some checkers will give you advice on writing style as well as grammar rules. If you write a long sentence or use a trite expression, the checker will suggest you revise your work.

Grammar checkers have different tones. Some will phrase their suggestions cautiously, using words like "consider rewriting" and telling you that you should "avoid" a word that is, in fact, a serious error.

Other checkers are brash and even intimidating. These checkers will tell you that a word is a spelling "error" instead of just admitting the word is "not in the dictionary."

Confident writers can deal with the suggestions their grammar checker throws at them. They know when the checker has parsed a sentence incorrectly or when its suggestion is over-cautious or just plain wrong.

Trust no one?

The biggest danger lies in over-reliance on a checker. Remember that language is too varied and complex for software to deal with effectively.

Learn to recognize your own writing problems, and then use the computer to help you spot them. For example, if you're a writer who over-uses the passive voice, as many technical writers do, then heed the warning and revise your sen-

In the end, however, writing skills have to be developed the old-fashioned way. When students ask how they can become better writers, they get this advice: read a lot, read attentively, learn what mistakes you need to correct, and practice your

This may not be the quick fix that most technophiles would like, but the computer does not yet offer shortcuts to good writing. •

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PRODUCTS:

 By MYLES WHITE nless you own a Mac or an old Commodore Amiga, combining television and your computer can be both expensive and frustrating. They don't work or play well together.

Nevertheless, there are some practical reasons for combining TV video with computer graphics. Still-frame grabbers, for example, can add pictures from your home videos to a personal electronic family album or Web page, or can be used in more sophisticated security systems or in electronic slide presentations. And although storing moving images in native TV video format will eat up your hard drive, most of the presentation applications (e.g., Freelance, PowerPoint, and the ilk) can play back at least compressed AVI video files.

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I know at least one home-based stock junkie with a tuner-equipped board who cruises back and forth between Newsworld, CNN, and the cable company's stock quotes in a little window on screen. Being able to combine the two technologies to output the results to a large TV or tape can both bolster your home video collection and add interesting effects to company training or promotional videos.

Little things mean a lot

It's the little things that will getcha every time, and there are several to keep in mind before you get down to brand/feature/price comparisons. Television in your PC always involves adding one or more circuit boards to

the system that weren't there when you bought it—unless you had a consultant create one for you for the express purpose of using it as a video platform. Although many companies make PC/TV products, not all of them are compatible with all products manufactured by the other folks (i.e., computer video controllers).

Unless cooperating products are made by the same company (such as ATI Technologies or Matrox) and purchased at roughly the same time, there is no guarantee the two (or more) will work together. You really must check with all of the hardware suppliers and have a long, serious talk with the vendor before you buy.

I don't even want to talk about how "funny" some of the applications bundled with these products and/or their driver software can become in the presence of other software, other devices, and/or outdated (or better yet, newer) Windows DLL drivers. Seriously, folks, to start to invest heavy time and coin in PC/TV video, vou gotta be on a mission.

Having a clear idea of what you want to do before you head out will also help, because I wasn't able to turn up any products that did everything. While several products will allow you to see motion, place video in a window and overlay computer graphics on it, or fiddle with frame captures, they don't necessarily allow you to store motion or come with tuners for channel-hopping.

I wasn't able to locate any products that would do both TV-to-PC video input and SVGA-to-TV output. These boards are a separate category.

There's also one other little thing that may bite you, but it's largely dependent on which product(s) you choose and what you plan to do with them. PC/TV boards designed to provide full-screen video usually can't provide your monitor with a horizontal frequency higher than 31.5 Hz. It's no big deal until you realize that the high-priced monitor you bought to give you ultra-high SVGA resolutions can't scan down that far (ask me how I know).



Ready one, take two

For the most part, prices for PC/TV products are going to have a bearing on the quality of the images you see and the images you get to work with. Most of the best quality products are for professional use (and carry a correspondingly stiff price), but for homelevel products, we've arbitrarily assigned an upper limit of \$1,500.

continued on page 39

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Toshiba 610CT	P90\4.9lbs	8MB/770MB	TFT 9.5 "	\$4196	\$3504
Toshiba 420CDS	P100 6XCD	8MB/810MB	DS 11.3"	\$3710	\$3570
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continued from page 37

But don't panic. Most of the examples in the sidebar come for far less. As noted above, both of the large Canadian graphics controller producers, ATI Technologies and Matrox, have products compatible with several of their computer video products-for example, you must have a Matrox Millenium to use the company's Illuminator board-but if we get into

Some PC/TV products

Advanced Digital Systems (ADS) Tune-in TV for Windows

Features: Automatic start timers; still-frame capture, video print; motion-video capture; TV charting (view/scan 16 channels at once); scalable TV windows, 16-step zoom; support for 16.7 million colours; 181 channel tuner; AVI playback support; external video input includes VCR, laser disc, or Camcorder, and you can switch between TV Tuner and either composite (RCA) or higher quality S-Video inputs. Suggested retail price: \$389.

Also available: Tune-in with a remote mouse and four models of the VGA TV Elite (Internal, external, with or without remote mouse), an SVGA-to-NTSC (TV) converter. Suggested retail price for the basic Elite internal unit about \$259.

More info: http://www.ads-mm.com/ or EMJ Data

Systems 1-800-265-7212.
Creative Labs Video Blaster SE100 video overlay and capture board

Features: Input from video cameras, VCRs, and laser discs (no tuner); ability to combine computer-generated graphics and text with live video on your PC in a resizable windows; compatible with NTSC (North American TV) and several flavours of PAL (British TV), but not SECAM (French and some Asian TV format). Suggested retail price: US\$329.95.

More info: http://www.creaf.com/wwwnew/complex/products/ps_video.html or 1-800-998-1000.

Data Translation Broadway

Features: Captures full-colour, full-motion video

all their variations, we could be here all day. You should probably investigate those companies further via their Web pages.

Hardware

There's also a smaller Canadian alternative available through Markham, Ontario-based MIT Computer Supply, which has developed its own MicroJack line of products. This is one of the places you could shop for a consultant to build you a custom PC/TV video system. •

from an S-video or composite video source at 30 frames per second (fps), with synchronized digitized audio; video is digitized in nearly real time (about three minutes to capture one minute) and stored on your hard-drive in editable MPEG-1 format (cut, paste, save selection, replace audio); included software allows you to combine several video clips in one sequence and include simple transitions; can compress existing uncompressed AVI files from any video source (you don't have to capture a video clip with Broadway in order to compress it); requires a complete MPC-3 compatible Windows 95-based system.

Suggested retail price: US\$995.

More info: http://www.b-way.com/ or 1-800-249-1000 Play Inc. Snappy Video Snapshot

Features: Frame grabber; custom HD-1500 chip set; attaches to any analogue video source (but doesn't have its own tuner); lets you adjust colour balance on the fly before you commit to a capture and stabilizes motion to get the best results; the hardware, software, and picture quality of the final result all get great reviews.

Street price: under \$250.

More info: http://www.play.com/ or (916) 851-0800 (8 AM to 6 PM Pacific Time).

Other contacts

ATI Technologies: http://www.atitech.ca/or (905) 882-2600.

Matrox: http://www.matrox.com/ or 1-800-361-1408. MIT ComputerSupply:http://www.microjack.com/, (905) 946-0908, or 1-800-796-5225.

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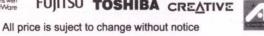
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Videoconferencing: Getting together



Educator Sandra Mingail The teacher stands in front of the class and lectures from wellthumbed notes. Students scribble madly binders, then return home to memorize facts.

Socratic method of instruction is, thankfully, going the way of the dinosaur. Today's enlightened educator shapes learning experiences with the help of computers, video,

telephone lines, and a global community of like-minded colleagues.

Distance education-the process of creating and providing access to learning when the source of information and the learners are separated-is nothing new. In fact, for over 25 years, students enrolled in correspondence courses have poured over textbooks, listened to audio tapes and radio broadcasts, or watched television screens in pursuit of higher learning. More recently, self-paced computer courses deliver information to students at any time of day in the privacy of their own home.

In this column, I'll focus on group videoconferencing, a relatively new, yet burgeoning offspring of distance education.

Gearing up

Imagine yourself seated in a typical classroom. At the front of the room is a largescreen monitor, with a camera mounted on top. Four or five television monitors hang from the ceiling at the back and sides of the room. Every few seats contain an ovalshaped, built-in microphone and a panel with several switches. There is also a huge white board at the front of the class, connected to the teacher's computer, and what looks like a compact small overhead projector that sports a miniature camera.

This was the scene that greeted me on a recent tour of Bell Canada's Centre for Distance Education, housed in George Brown College's Casa Loma campus. A joint venture between Bell, George Brown, and Oklahoma's Teletraining Institute for distance education, the Centre showcases the latest in videoconferencing technology, while delivering model courses in distance

Pioneering Ontario universities have also explored the benefits of this live, interactive video-based medium. Western, Queens, and Waterloo all deliver group videoconferencing sessions.

What's the point?

Group videoconferencing boasts plenty

of benefits. Faculties unable to offer courses due to lack of qualified staff or facility restrictions plug into existing distanceeducation courses. Guest speakers and specialists in the areas of science, art, and literature are "invited" to address a group of students.

Collaborative projects between schools encourage the exchange of information and communication between diverse cultures. Expert teachers team-teach to groups of remote students. Teachers-in-training are observed and critiqued unobtrusively by mentor teachers. Master teachers simultaneously instruct groups of distant teachers in learning strategies.

Does it work for education?

But to echo the words of communications guru Marshall McLuhan, video is by nature a passive medium. Will students reared on a diet of one-way television react to it in a learning situation? How must videoconferencing architects shape this two-way video connection to make it educationally sound?

According to Sherie Neal, manager of the Bell Centre, courses are designed to soften the effect of high technology. Participants are mailed a personalized welcome letter before the course begins. There are teambuilding activities. Distant colleagues may get acquainted through short video tours of each other's neighbourhoods.

Teletraining Institute, a ten-year-old, American-based firm, handles content and curriculum for the Centre. Dr. Lorne Parker and Alice Parker, a married couple, combine their instructional technology, adult education, and communications experience to produce material that ensures content does not take a backseat to technology.

Since videoconferencing runs the risk of becoming simply a glorified way to lecture long distance, the Parkers preach a varied use of graphic material. A strictly video diet of "talking heads" quickly instills boredom. The challenge remains to incorporate other ways to deliver meaning. Onscreen computer-generated presentations, video clips, collaborative use of electronic white boards, and object demos through the use of a document handler-all of these methods serve to vary the pace of a group videoconference.

Big brother?

Ergonomics plays a big role in classroom design. Students and instructors need to be clearly heard over microphones and easily viewed by remote cameras. And a room full of high-tech equipment can be an intimidat-

CBCI is a Canadian firm quickly earning its laurels in the fast-paced videoconferencing

arena. The only Canadian systems integrator and manufacturer of videoconferencing technology to date, CBCI installations exist at the University of Montreal, George Brown College, the University of Western Ontario, and Simon Fraser University.

Videoconferenced rooms must be built to enhance learning. Students don't want to drum their fingers on the desk as they wait for a response to their questions. Audio links must be clear and seemingly instantaneous. Blurry, hazy screen images just don't make the grade. They must be crisp and distortion free.

Better-equipped videoconferenced classrooms offer flexible modes of instructional delivery. Facilitators may begin at the podium addressing both immediate and remote classrooms. Then they might place an object on the document handler for a high-tech show and tell. A short video clip might be next. For the finale, perhaps a ten-minute interactive session with another distance educator using an electronic white board.

Smooth management of group videoconferencing takes practice and knowledge of the powers of electronic media. Instructors may temporarily don the role of stage managers as they learn their way around microphones and video touchpads.

Eventually, techno-gadgets become just another way of delivering the messagealbeit one a millennium away from dusty chalk and blackboard memories!

Sandra Mingail is a Toronto-based computer educator and consultant. Send comments or questions to mingail@idi-

For a one-stop site on distance education, connect to http://cda.mrs.umn.edu/~itvumm/delinks.html Here you'll discover listings of online college courses, educational publications, the distance education clearinghouse from the University of Wisconsin, the World Lecture Hall (a world-wide index of higher-education courses using the Web), plus references to books, articles, and papers.

The Canadian Links at http://olic.mta.ca/teleedds.html#sites are sponsored by New Brunswick's TeleEducation initiative.

Distance Education mailing lists to try are: **Distance Education Evaluation Group** ASAT-EVA listserv@univm.unl.edu International Discussion Forum for Distance Learning DEOS-L listserv@psuvm.bitnet DEOSNEWS listserv@psuvm.bitnet



Consumer advice for Canadians cyberspace

. By PAUL KING . .

You are now reading what may be the only detailed source of advice for Canadian cybershoppers for some time to come.

The Canadian government currently offers no advice to consumers on how to protect themselves online. Worse, Canadian government agencies are often full of conflicting, and often incorrect advice on where to go for help when consumers feel taken in by a false online advertisement. This is a dangerous lack of leadership, which can only cause problems for both consumers and business.

If we are allowed to extrapolate the statistics from the US Federal Trade Commission, we could have a potential 1.4 million Canadian households (about 5 million Canadians) doing business by modem this year-few of whom have any idea how to protect their privacy or their money on the Internet.

Pig in a poke time

What makes the Internet different from doing business elsewhere is the fact that you never see the seller in person. You also cannot see any storefronts or physical goods. Every business looks as established, and as legitimate, as anything else in cyberspace.

If the Internet is to be a popular place to shop, it must be a place where there is a trusting relationship between the buyer and seller.

First of all, what kinds of rip-offs really happen in cyberspace? Surprisingly (or maybe not), the same rip-offs that happen everywhere else: get-rich-quick schemes, chain letters, false or misleading advertising, fee scams, something-for-nothing schemes-the list goes on.

Luckily, very little crime has actually happened in Canada involving the Internet to date. The first and only case in Canadian courts so far involves a Calgary telemarketing company called "The Integrity Group," who have been charged with numerous counts under the Competition Act, including misleading advertising. The way they were arrested reveals the fact that the Internet has no police jurisdiction; even though Integrity operated in Alberta, Manitoba, and Ontario, the charges were laid by the Calgary police-not the RCMP.

A major issue with many cybershoppers is online privacy. Hackers can "overhear" an unsuspecting buyer entering their creditcard number or password on a Web page or on an e-mail. Their next bill may include a myriad of mysterious purchases, and charges.

Here comes the cavalry

There is a definite solution to the privacy problem: a military-grade encryption called PGP, or "Pretty Good Privacy." The user sends a message, which PGP scrambles. The message can only be descrambled by the recipient, who has the key. You can obtain PGP on the Web at http://www.ifi.uio.no/pgp/

For more information about PGP, there is a FAQ located at http://www.mit.edu:8001/ people/warlord/pgp-faq.html

Canadian law, under section 52 of the Competition Act, does not define "advertising." According to Timothy Denton, legal counsel to the Canadian Association of Internet Providers, the Canadian phrase "misleading representation" is open to broader interpretation and has fewer loopholes. Thus, a "misleading representation" need not be an advertisement, according to Denton.

Cecile Suchal, spokesperson for the Competition Bureau of Industry Canada, agrees: whether you are shopping through the classifieds, over the phone, by mail-order, or through a bulletin board service, the same laws apply.

The Internet can be a safe place to shop when proper precautions are taken. As always, the rule of "buyer beware" applies, and it is always best to shop around. •

Shop smart!

Here is some advice for the 5 million Canadians who may potentially shop online this year:

Check to see if your software conforms to the SSL (Secure Sockets Layer) standard, or that your Web browser uses S-HTTP (Secure hypertext transfer protocol). This should give you security similar to using your bank card to pay for your groceries at the supermarket, and should be part of your software package.

Shop with companies you know. If trying out a new merchant, ask for a catalogue or brochure.

Determine a company's refund and return policies before you place an order.

Never give out your Internet password to anvone.

When making passwords, it is recommended that you mix upper and lower case letters, or mix letters, numbers, and symbols. For example: IcuR2Ys4mEl

Avoid using familiar words or serial numbers in your password.

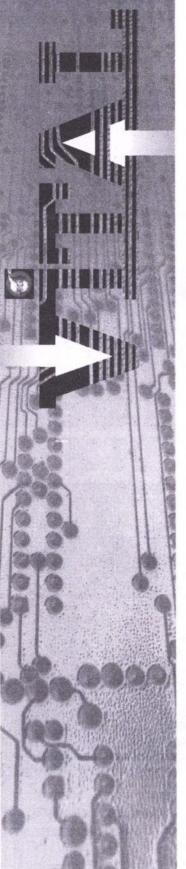
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Pay close attention when entering an order. An extra keystroke could get you 11 shirts when you only wanted one. Type carefully. Check to make sure that all charges are calculated correctly.

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http://www.cis.ohio-state.edu/hypertext/

faq/usenet/isdn-faq/faq.html

ISDN InfoCenter:

http://www.isdn.ocn.com/

ISDN Lightning

http://web.ldirect.com/~isdn/isdnworld

http://www.microsoft.com/windows/getisdn

http://www.farallon.com/www/catalog/cat-

Usenet: comp.dcom.isdn

The ISDN Experience

B



By BRANDI JASMINE

I'm not entirely a "newbie" when it comes to computers and the Internet, but I often feel challenged when striking out into new

territory. Thus, it was with a combination of trepidation and excitement that I accepted the challenge to have an ISDN line installed in my home

ISDN stands for Integrated Services Digital Network. Basic rate ISDN (BRI) splits the telephone line into 3 digital channels: 2 "B" channels and one "D" channel. The B channels are used to transmit data (voice or electronic) at rates of 64 Kbps. The D channel communicates with the telephone network. With two B channels, you can make two calls simultaneously, and each is assigned a separate phone number.

PTDT, as the X-Philes say

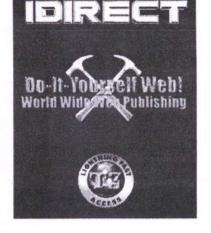
Okay, I admit that the thought of 64 Kbps Internet access did have me drooling. But I'd also heard the horror stories. Like most other technological terrors however, this one proved to be more frustrating than frightening, and it was not as painful as I imagined it would be.

The installation went smoothly, with a little help from the tech support at Netopia and the ISP, who provided tweaking instructions. We had to call twice to confirm that our SPID (Service Profile Identifier) was entered correctly, and I discovered that my serial card had to be replaced. Overall, though, it was no more challenging than installing any other modem.

I found the installation relatively painless. and the speed improvement tempting, but I was not completely convinced that ISDN was one of my "have-to-haves." It did not seem to me that browsing speed was greatly improved.

The benefits for downloading files are limited to the top speed of the sites one is connecting to. I found consistent 28.8 Kbps speeds at many popular sites, indicating to me that many of them have not yet invested in ISDN. The top speeds were at my home Web site, where I do most of my file transfers, so the speed did make a difference, but not enough to warrant the expense in my case.

I would reconsider that judgement, however, if I was supporting a LAN, or if I were regularly connecting to another high-speed site. In fact, ISDN rates and services are very attractive networking solutions to small



businesses who use the Internet to substitute for a fully-fledged external network.

Be virtuous

My recommendation for end-users and consumers is to wait a few months before upgrading to ISDN, especially if you have a slower computer that is begging for memory. Invest in some (currently bargain priced) RAM chips and/or a new motherboard-and by the time you've saved up some spare cash, ISDN modem prices will have come down to reasonable levels. This is definitely the toy of the "power user" or small business, still currently the principal target markets for ISDN

You should be able to obtain ISDN access through your regular provider at similar rates to those charged for ordinary dial-up services. Some comparison-shopping might be in order here, and the best place to start is BC Tel's Facts by Fax 800-578-ISDN (4736) where you'll be promted on which info sheets you want. End users must still purchase a phone line from BCTel, so it may be best to stick with their recommended providers

Get out your rulers

ISDN service is not universally available (even within city limits). You must be within a given distance of BC Tel's equipment (generally within 18,000 feet). To determine whether your wiring will support ISDN, call BC Tel (432-ISDN or 800-355-3282) for a "line qualification."

This may take from hours to days, depending on your location and the work load, so plan ahead. When BC Tel arrives to install the new line, you will require an 8-pin jack plus labour (\$98/hr for the first hour and \$18 for each additional 1/4 hour) for wiring charges (the average installation takes about 15 minutes). ISDN costs \$80-140 per month

depending your rate group.

Your ISDN hardware and software choices impact how your ISDN service needs to be configured. You might not want to purchase new hardware until you are sure you can get ISDN. Some Internet providers, like imagi.net, offer special packages that include the legwork, hardware, software, and technical support

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to see you through to a successful connection.

Choosing a modem is the tricky part. They come in a wide array of styles and prices, from the BitSurfr Pro (\$495) to the Netopia ISDN Modem (the model I used retails for \$600). You will want an ISDN modem with an NT1 interface if you want to be able to plug in a phone or fax, and will require a 16550 UART serial port, if you choose an

Microsoft offers information on its Web site that includes the system software support a Windows 95 user may need to access the Internet, as well as Microsoft's Internet Explorer

external model.

2.0 World Wide Web browser. The site also can send an electronic order for ISDN service to Bell Canada.

Some final ISDN tips

Remember your Service Profile Identifier (SPID). Your set-up software may call for this number, and I am told by Netopia staff that it is a common stickingpoint at technical support. Double-check it with your Bell ISDN installer.

The SPID consists of the 2 assigned phone numbers with some additional digits (usually two zeros) added to the end.

If you are looking for a continuous connection, such as connecting a Web server



to the Internet, a dedicated line may be a better option. ISDN is only connected when it is being used. For 24-hour connections, ISDN can end up being more expensive than a dedicated line, which has a flat rate. It's best to ask your provider for a comparison price.

Brandi Jasmine is a freelance writer, illustrator, and moderator for Oracle Lists. For un/subscribe instructions, please write to nitefall@idirect.com or visit http:// web.idirect.com/~bjasmine/ and click on "lasmine's Lists." •

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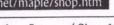
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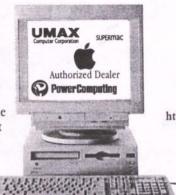
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It's a MacWorld after all



a dream? Last year's financial abysmal results, the bizarre marriages, and even turfing the boss? Nope, it was all true. Every last horrible bit of it. But, as an old friend of mine was fond of saying, "experience is the hardest kind of teacher. It gives you the test first and then the lesson." So what was the lesson

and has Apple weathered yet another storm?

Well, if MacWorld, the semiannual pilgrimage to MacMecca, was any indication, Apple may yet be sailing with the wind The company may not be safely in harbour, but the waves aren't washing over the gunwales anymore. Both MacWorld exhibition halls were packed with customers and vendors climbing over each other to buy and sell stuff, so Apple's woes appear to be receding.

Not only did Apple announce it lost only \$32 million last quarter-much less than most analysts and other Apple watchers had estimated-but it also held a mega-party the night before the show that buoyed the spirits of all attendees

More than 20 new computer models were introduced by Apple and its cloning competitors. Apple itself announced four new Power Macs and two new Performa models, ranging in speed from 132 MHz to 200 MHz.

One of these Power Macs was the company's first venture into the multiprocessor world. The Power Mac 9500/180MP features two 180 MHz 604e screamers and is targeted at those who need lots of power and don't mind spending the bucks to get it.

Genesis of the clones

Not to be outdone, DayStar Digital announced three multi-processor Mac clones named Genesis that will be equipped with two to four 604e CPU chips, ranging in speed from 180 MHz to 200 MHz! "Geesh," the Ranting One overheard a fellow press hack saying, "no wonder we're getting all these blackouts.

The talk of the town was Power Computing's PowerTower Pro 225, a 225 MHz bruiser that comes with 16 MB of RAM, an 8X CD-ROM drive, and bit-busting 604e CPU chip. The cost? MacWorld attendees could pick up one of these high-end boxes for less than five US Big Ones.

However, most missed the connection between the Power Computing bungee jump and the possible future of computing. Brave (and presumably life insured) MacWorld attendees could jump from a suitably high crane, saved from certain death by only a thin cord. Now that Power Computing's got the fastest Mac-or PC for that matter-the Ranting One wondered how long it would be before Intel's product managers started doing the jumping. After all, could Intel's near-monopoly on CPU chips be threatened by the PowerMac consortium? Well, it's a nice thought, anyway.

Free editor with every meal

No, it's not some new marketing promo we're trying at Toronto Computes! to boost circulation. Rather, it's a comment on how many MacWorld exhibitors were flogging their Web-related wares. If exhibiting companies weren't rolling out their high-speed clones, they were selling (and sometimes giving away) their HTML editors.

For example, Apple's software sub, Claris, announced its Home Page software, an easyto-use Web-authoring solution for people new to the Net The cross-platform software is now shipping at a suggested retail price of US\$99. As an added bonus, all Claris Home Page purchasers will receive a coupon for six months of free Web hosting.

A company called gonet ("no capital letters for us, please") was giving away the basic version of its HTML editor and charging the magic \$99 for its full Pro version. With gonet's product, you could "go from zero to Web in about five or ten minutes-no foolin'." a sales rep barked at the assembled crowd.

Adobe, famous for its PageMill editor, was also showing off its new wares. The company promised the much-needed update to PageMill will ship this month. Judging by the ferocious HTML competition, Adobe better get its act in gear, and fast,

The newest version of HoTMetal. Pro. from Toronto's SoftQuad, was also being showcased at MacWorld. SoftQuad's CEO, Dave Gurney, led off a press conference by showing how to use his product. Frankly, if the boss can use the product (and not rely on the geeky tech folks to work their magic), it must be easy, right?

If you're serious about HTML editing on the Mac-and it seemed that everyone was fixated on this topic during the show-give SoftQuad a call (1-800-360-8454). As they say in California: "kewl!"

Party on!

Some Apple execs stepped into the lions' den when they hosted a closed party for the company's top corporate and education customers after hours. Marco Landi (Apple's new COO), marketing SVP Satjiv Chahil, and others were on hand to give their story to the assembled crowd.

Jim Gable, Apple's veep in charge of AppleSoft and Robin Abrams, now in charge of sales for Apple Americas, were in attendance as well.

The party was notable for those Apple folks not in attendance. Paul Wollaston, one of Apple's key multimedia gurus, for example, was MIA. Rumours flew through the assembled community that he might be doing a led Clampett, loading up his truck and moving to Bev-er-ly. Hills that is. Swimming pools. Movie

One company not moving any time soon is Iomega Corp. The storage company announced it will work with VST Technologies to develop an internal Zip drive for PowerBook owners. Iomega's new notebook version of the 100 MB Zip drive will be available in the first quarter of 1997 and will plug directly into the floppy drive bay of Mac PowerBook 190 and 5300 computers. Very kewl!

If you have news of an impending voyage or just a quick walk on water, why not share it? Be clear, concise, and fawning and send your tip to David Rosen c/o Toronto Computes! or directly at MacRant@aol.com. Please note that due to the volume of mail, individual questions cannot be answered. •



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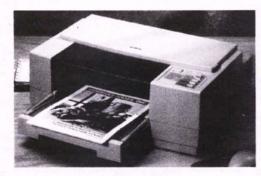
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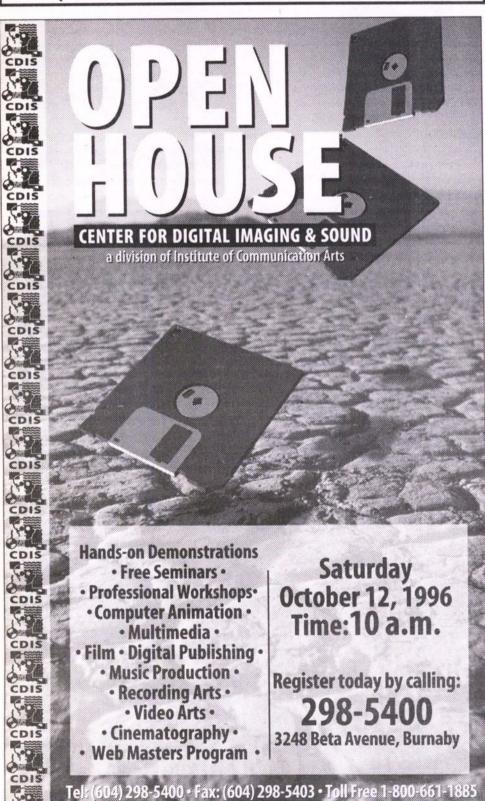


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tebook

Notebooks today are just as powerful and fully featured as desktop PCs. Are they leaving portability behind?

. By LYNN GREINER . .

My first notebook computer weighed 4 pounds, had 32 KB RAM (I expanded it from the base 16 KB), an 8 line, 40 column monochrome LCD screen, an 80C85 processor, and no disk drives. I saved files on an audio cassette, and used a speedy 300 baud modem for communications.

This was state of the art in 1984. And just over ten years later look where we are. All of the notebooks in this roundup are quite capable of becoming replacements for a desktop machine, with hard drives in the gigabyte range and memory capacities that would have put a minicomputer to shame in my first note-

The hard drives, in the main, are removeable, allowing users to share a notebook yet still have personalized systems. And if a machine malfunctions, if the disk drive isn't the faulty component, it can be switched into another computer while the sick machine is getting fixed.

Today's notebooks offer 800 x 600 video or better on decent-sized TFT (thin-film transistor) colour screens. They run speedy Pentium processors-Intel has just announced a 150 MHz chip for mobile use—over a PCI bus, and almost routinely support SoundBlaster compatible stereo audio, and infrared for wireless communications with peripherals.

CD-ROM drives are no longer a luxury, either-they're almost a necessity with today's software, so they're included in many mid- and high-end notebooks. Panasonic has even introduced a notebook with a rewritable optical drive that doubles as a CD reader (the PD/CD-ROM drive), for under \$10,000.

Most of the machines with CD-ROM drives fit them in by leaving out the floppy drive. You must remove the CD-ROM drive and slip a diskette drive into its place. Some vendors also use this bay for devices as diverse as extra batteries and TV tuners.

Getting the point

Where a trackball was once the "standard" notebook pointing device, now the split is between tracksticks (those little nubs on the keyboard that act like mini-joysticks) and touch pads. Each takes some getting used to, and many of the users I deal with use standard desktop mice while they're in the office.

I've also found that, with touch pads, the cursor "sticks" occasionally-you lift your finger from the pad after dragging and dropping something, and when you attempt to move the cursor elsewhere, the dragged item tries to

go with it. This is not a brand-specific problem, so I suspect it's generic to the technology.

On the plus side, touch pads don't get gummed up by dust and sticky fingers. They may become unpleasant to touch, but they'll still work. And tracksticks, although they are affected by environmental grunge, are less finicky than trackballs.

All we can say about battery technology is that it's holding its own. The new Lithium Ion batteries, standard in most high-end machines, can power the units for 2 to 3.5 hours, depending on which devices you're using. (Nickel Metal Hydride-NiMH-is the second choice. Avoid NiCad!) This is a tribute to both the battery makers and the PC designers, since the number and complexity of power-drawing components has increased, yet usage per charge remains more or less constant.

It still won't run a machine on battery during a transcontinental plane trip, or an extralong meeting, though. New technologies, like Lithium Polymer, are under development.

What a card!

PC Card (PCMCIA) slots are still critical, for modems, network interfaces, and SCSI adapters, and new notebooks now boast slots using the speedy CardBus. Be cautious about these units if you're running Windows 3.11, though-there's a glitch in one of the common chipsets used to let cards talk to the computer that can prevent some cards from working under Windows 3.11 (Windows 95 uses a different mechanism, so it works fine).

My old, faithful 1984 notebook still has one major advantage over these desktop replacement marvels-it's half the weight. Today's systems tip the scales at between 6 and 8 pounds, and by the time you add extras like an A/C adapter, you're hauling quite a load! We weighed the heaviest of the bunch we reviewed (the Toshiba) in its canvas carrying bag, with separate floppy drive, cables and (slim) manual—13.5 pounds!

Shopping tips: buy as much memory as you can afford (preferably Extended Data Output, or EDO)-16 MB should be the minimum you consider, since Windows 95 is preloaded on all of the (PC) machines, and it loves memory. Ditto for the hard drive-get the biggest you can. Try not to settle for less than 800 MB, because applications and operating systems are disk hogs these days (that's why they come on CD-ROM).

Audio should be 16-bit SoundBlaster Pro compatible. If full-motion video is a priority,

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Try out the keyboard to make sure its touch and operation suit you-keyboard preference is a matter of taste. And check for a Kensington lock slot (a specially reinforced opening that secures a hardened-steel locking cable), so you can tie this expensive toy down when it's unattended.

Now let's have a brief look at some of the newest crop of high-end notebook computers (unfortunately, the Compaq Armada and Digital HiNote Ultra II were unavailable; look for reviews in future issues).

Mac daddy

The sole non-Intel machine we looked at, the 6.2-pound Macintosh PowerBook 5300c. is showing its age (it's a whole year old), but we can't forget that it pioneered a number of the features we now routinely see on new PC systems. It boasts a 100 MHz PowerPC RISC processor, a bright 10.4-inch active-matrix colour display, a 750 MB hard drive, and 16 MB of RAM. It was the first notebook to offer a trackpad, though unlike the ones available on PCs, you can't click the mouse button by simply tapping the pad.

There's 16-bit audio, with a single little speaker under the Apple logo at the bottom centre of the display, built-in infrared, and dual PC Card slots. The floppy drive may be removed and replaced with other Expansion

I don't pretend to be a Mac guru, but per-



High wired!

gations, maintenance, and even renovations. For example, this year he was the one

called on to scale the Royal Bank Plaza building in Toronto, when a four-metre piece of metal was found dangling dangerously from high up above.

With ropes and harnesses and no fear of heights, Ivan can do a week's work in one day, saving companies money by pointing out, recording, and solving problems before they get out of con-

"By the end of the drop, I can print out a document, give you a diskette, or show you the image on a laptop," says Kristoff.

Need a 30th storey window caulked? Got a cat stuck on a hot tin roof? According to Kostoff, there's no one else in Canada who can do the job quite as quickly and efficiently.

Kristoff's long-term vision is to coordinate the first urban high-rise search-and-rescue team, which would provide emergency response and post-accident investigation using wireless communications and multimedia laptops. He's also interested in highrise security, since, he claims, "real professionals don't come in from the ground."

With a laptop, Kristoff can do what he does best almost anywhere-as long as it begins with "r." "You can find me with a laptop on the road, on a rope, on a rack, on a rock, on a roof, on a radio and in rescueresponse," he says. •

high-rise buildings, doing on-site wall investi-

By MARA GULENS • •

Does our cover shot bring back memories

from one of this summer's blockbusters,

"No way. This is not just Tom Cruise. This

guy is more radical than that!" says Ivan

Kristoff, while suspended from ropes during

the shooting of this month's "Mission:

Kristoff makes a living taking his laptop,

digital camera, video, and other high-tech

paraphernalia to absurdly high locations. Like

Spiderman, he crawls around the walls of

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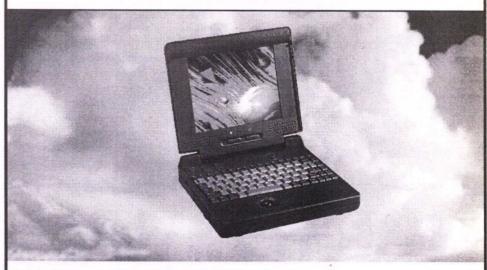
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formance seems brisk enough, and the Lithium Ion battery provides 3 to 5 hours of computing time per charge. The 5300c costs about \$4,199.

Send me an angel

The Angel 5600, also known as the "Performer," is from Canadian Advanced Industries in Mississauga (1-888-322-6435 or (905) 501-8375). In a 7-pound box, they've managed to squeeze in a 100 MHz Pentium, 16 MB RAM, 810 MB removable hard drive,

with a 3.5-inch floppy drive and a 6X CD-ROM drive simultaneously available. The 12.1-inch TFT 800 x 600 display is clear and bright; the pointing device is a touchpad. Audio is 16-bit SoundBlaster compatible, and there's also a 115 Kbps IrDA-compliant infrared port, plus the usual others. Performance was thoroughly acceptable.

The keyboard is fairly standard, and comfortable to type on.A Windows 95 keyboard is optional. Battery life is average, or a little less

than average—they use NiMH batteries—and you can buy a bulky but powerful external battery pack that clips onto the back of the machine. The Performer, as configured, lists for \$4,697; base price is \$3,999. For an extra thousand dollars, the Presenter (model 5300) comes with a screen that turns into an LCD panel for an overhead projector.

Long-distance runner

The AST Ascentia P50 is a lively 133 MHz Pentium system. Our review unit came with 8 MB RAM (inadequate-AST later sent an upgrade to 16 MB), a 1.2 GB hard drive, and a backlit 11.3-inch TFT screen with 800 x 600 resolution. The pointing device is a touchpad.

Two stereo speakers reside in the palmrest; sound quality is adequate, but there are jacks for external speakers should you need better.

The hard drive is removable, and the quadspeed CD-ROM drive may be replaced with a 3.5-inch floppy drive. Chuck a second battery in, and AST claims up to 10 hours of comput-

Ports include a 115 Kbps IrDA-compliant infrared, plus the usual serial, parallel, external video, and keyboard/mouse. There's also a game port, and a connection for the optional port replicator.

The keyboard's functional keys are arranged rather oddly, with the Insert and Delete keys up in the top right corner. But its cursor keys are in a convenient inverted "T" configuration, the Shift, Tab, Backspace, and Enter keys are all of a good size, it has the special Windows 95 function keys, and its touch suits me

One nuisance: PgUp is next to the right Shift key, and I kept hitting it by mistake.

The Ascentia P wasn't the fastest performer in the bunch, but it held its own well. Prices start at around \$6,999

Dell's Latitude LM P133ST comes loaded for bear, with a 133 MHz Pentium processor, 16 MB RAM, 810 MB hard drive, and quad-speed CD-ROM (scheduled to become 6X this Fall). for \$4,999.

The bright 12.1-inch active-matrix TFT colour display is clear and easy to read. Stereo speakers live in the top corners of the keyboard, while a touchpad occupies the centre of the palmrest.

All of the review machines have dual PC Card (PCMCIA) slots, but Dell has put the card-eject buttons for the two on opposite sides of the slots, making it much easier to remove one card without accidentally popping the other. The slots are protected by shutters, rather than the usual door that flops down and often snaps off.

The keyboard is a scant 1/8 inch deeper than AST's, but it's better organized, with Home, End, PgUp, and PgDn marching down the right edge. Enter and Backspace keys aren't as large as I'd like, but they are double sized.

Sixteen-bit stereo sound, standard ports, plus 115 Kbps IrDA round out the Latitude's basic features, and its Lithium Ion battery supplies enough power to run them all for a solid 3 hours, with a bit of juice left over. Dell includes tools that keep the battery performing at its best.

New port, large keys

The Hewlett Packard OmniBook 5500 CT is a 7-pound, 120 or 133 MHz Pentium with 16 MB RAM and a 1.35 GB hard drive. Its removable floppy drive can be replaced with an optional CD-ROM drive. The 800 x 600 12.1inch TFT display has external brightness and contrast controls, rather than the function key adjustments most of the others offer.

The IrDA port is the newer, 4 Mbps flavour, and there are connections for NTSC/PAL and S-Video as well as the usual outputs (including SoundBlaster Pro-compatible 16-bit stereo sound).

The removable floppy drive has a built-in

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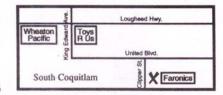
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cable that lets you plug it in to the parallel port if its bay is occupied by the CD-ROM or an optional extra battery. The keyboard has large, flat keys that make it ideal for users with big hands, and its feel is more responsive than I would have expected. The pointing device is a track-

Performance is not earthshaking, but quite acceptable, as was battery life. Prices start at \$8,170.

Think thin

The IBM ThinkPad 560's claim to fame is its size. It's a skinny little item (1.2-inches "thick") that weighs just over 4 pounds, yet it has a brilliant 12.1-inch 800 x 600 screen, 120 MHz Pentium processor, 8 MB RAM, and 810 MB hard drive. The floppy drive plugs into a port on one

The pointing device is a trackstick whose little red cap is roughened to prevent finger slippage. After dedicated mousing, I found it a bit too abrasive, to the point of dis-

Audio hardware is 16-bit SoundBlaster Pro compatible, and there's an external thumbwheel for volume control. The ports include the usual suspects, protected by a rubber cover that comes completely off-so it will disappear in short order. There's a connection on the bottom that mates with an optional docking station.

Performance and battery life were both indifferent (even a 100 MHz machine blew its socks off by comparison), but the ThinkPad 560 isn't about performance, it's about portability. And portable it is. It's so light that when I received the box, I thought they'd forgotten to put the computer into it. Prices start at \$3,999.

Nice surprise(s)

The NEC Versa 6030H came along when I was getting notebooked out, and it was an unexpected delight. It's a 6.9-pound, 133 MHz Pentium with 16 MB RAM, 1.35 GB

continued on page 59



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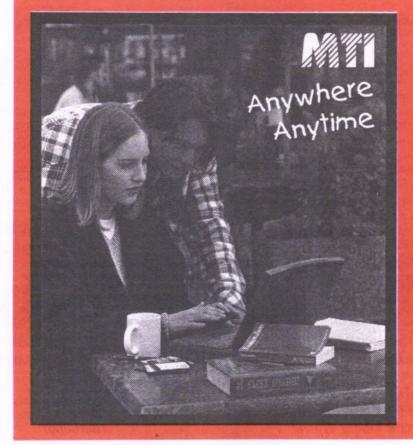
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Hack Attack: **Protecting Your Network Data**

• • By SEAN ELRINGTON • •

A part of every organization's Internet strategy should be a risk assessment and recovery plan in the event of an electronic break-in. Hackers tend to choose relatively quiet times such as long weekends or evening hours to mount a prolonged attack so the first you may hear of it is on a Monday morning when you get calls from panic stricken users who cannot find crucial files or log onto the network. A bit of forethought can make all the difference in recovering from an attack.

A good place to start reviewing your security arrangements is by doing a detailed risk assessment. There are a limited number of things a hacker can do to your network and any attack is likely to fall into one of several general categories.

Denial of service. This is the most difficult

type of attack to defend against and the easiest to mount. An attacker can simply flood your network pipe by sending continuous pings to your routers or they can exhaust the disk space on your mail server by sending thousands of garbage messages. This type of attack does not require any access to your system other than knowing the IP address of your gateway. Web servers are particularly vulnerable to these types of attacks since the TCP/IP protocol was not really designed with security in mind and you can exploit design flaws to, for example, hang server ports so the entire server must be rebooted.

While it is difficult to prevent these attacks they are not usually extremely damaging (of course, if you are, say, a political party and someone crashes your national network on the eye of an election)

Networking

You can usually easily detect a denial of service attack and get your ISP to block all packets coming from the attacker's IP address. You should regularly check your web server to make sure that it is up and running and limit your router's ability to respond to possibly fake ICMP packets.

Impersonation. Sending a fake email is a fairly easy thing to do and any organization which relies heavily on email to conduct business should treat incoming messages with suspicion. An unscrupulous competitor can masquerade as a trusted customer to send you fake orders via email, causing confusion when the orders are shipped. It is also possible to doctor web pages to place false or embarrassing information on them or even fake postings to controversial newsgroups.

You should educate users about the potential for fake email and perhaps look at getting some encryption or authentication package such as PGP or Entrust. This will entail some administrative overhead in training users and keeping track of keys, but it does reinforce the message to end users that the Internet is not a very private or trustworthy place. You should also regularly inspect your web site to make sure that it hasn't been hacked and altered.

Theft of data. Electronic industrial espionage can be devastating to small companies, particularly those engaged in software development. An attack can come from anywhere and if your beta code is stolen by an attacker on the other side of the world you have virtually no legal recourse. Kevin Mitnik, the so-called 'Superhacker', who eluded the FBI for two years before being caught, was particularly good at stealing information. One of his file stashes contained Silicon Graphics source code, cellular phone software from Qualcomm, sniffer logs from Motorola's Semiconductor Products Internet gateway computer, an entire password file from apple.com, Apple Computer's gateway to the Internet, lots of programs from a software company called Intermetrics, cell phone source code from a manufacturer and other software tools for breaking into computers in various ways.

Simply put, if certain data is highly proprietary and confidential you need to wonder whether the system should be connected to the outside world at all. If you must connect to the Internet, put a firewall in place to protect secure subnets and look at using strong authentication methods such as passcards to verify access to confidential servers. If possible, limit access to your network to business hours so that any attempt to come in after hours or on weekends is denied even if the attacker is using a stolen account.

Destruction of data. Hackers are by nature a

curious lot, and if they get in they are likely to poke around in your network trying to read or copy files. Hacking cookbooks with techniques for breaking into systems are freely available on the Internet and, while most hackers aren't malicious a clueless amateur bumbling around in your file system could easily have an accident trying out commands and moving files around. Every organization should have a data recovery plan in the event of a fire, server failure or other disaster and having a plan to restore data lost to a hacker should be part of that plan.

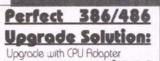
Trojan Horses. If you find that you have had a break-in you have no choice but to treat every file and program on your system with suspicion. A hacker may not need high level access to your system to place a Trojan horse in a directory which will create a backdoor when an unsuspecting user executes it. After a break-in you will need to reload the operating system from the original media and restore every file using a backup. Even then, you must be aware that an attacker in the past could have broken in undetected and your backup tapes may therefore contain altered files.

Proxy attacks. Some network administrators take a relaxed attitude toward security because they don't have any valuable or irreplaceable information to worry about, but they forget that once an attacker has gained access to your system they can use it as a platform to attack someone else. This is particularly worrying type of attack because the legal implications are still virtually unknown in Canada. If Company X can trace a break-in back to an account at Company Y (a fierce competitor) can they sue for damages? How can Company Y prove that they too were victims? Do they have a legal obligation to prevent their computer systems from being used in a malicious way? While this is a fascinating legal issue I doubt that any firm would want to pay the legal fees involved in defending a court case.

Network security is always a trade off between end user convenience, cost and security. Developing a security plan for your company means doing a risk assessment, preparing disaster recovery plans, educating users, purchasing and configuring some protection technology such as a firewall, encryption package or auditing software and keeping a vigilant eye on every byte going in and out of your organization. It is not a trivial exercise and it entails getting the support of senior executives and an appropriate budget. Remember, a hacker has time on his side - he only has to win once. You have to win everyday.

Sean Elrington specializes in WANs, firewalls and network security. He can be reached at ZED Data 473-2574 or via email at seane@zed.ca.

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The Ultimate Ghostly Experience

A Review of Gahan Wilson's The Ultimate Haunted House from Byron Preiss Multimedia Company, Inc.



• • By David Anderson • •

The CD-ROM game format lends itself to haunted house games very nicely, as evidenced by this remarkable collection of fun activities, published by Byron Preiss Multimedia and distributed by The Microsoft

Corporation. The Ultimate Haunted House is a very clever game, full of hidden surprises, mysterious puzzles, and straightforward hilarity. The player must locate and obtain 13 hidden keys in 13 hours of game play, or its back to the creepy hallways and dark dungeons of the haunted mansion forever. Before describing the intriguing situations, let me congratu-

late the designers for two big accomplishments. First there is no limit to the number of players; new players do not need to erase the progress of previous players in order to sign in and play. Second, the fact that inprogress games are saved allows the players to work



Software

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the keys

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time,



accumulated just because it's dinner time.

The game takes place in a beautifully-drawn old mansion, full of oddly-shaped rooms and animated furniture. As well, the 13 rooms of the mansion are populated by a gang of outrageous ghosts and monsters, who offer up keys in exchange for items collected during the course of the game. The player carries a bag from room to room, and in this bag, the collected items are stored. Each player gathers a different selection of ghoulish treasures as the game progresses. Click on the bag, and the items pop up, one at a time. Drag the object in view over to the monster or ghost, and drop it. If the monster likes the offering, it will let the player know. If the monster really likes the gift, it will give up a precious key, to be returned to the old clock in the foyer. The objects can be as innocent as toy trumpets, to trap the little boy monster, or as gross as hacked-off arms and little piles of stomach contents. Certain ghosts have specific tastes and needs, so it is part of the strategy to psychoanalyze the creepy house-dwellers, to get more keys from them. There are also many puzzles to solve, which uncover hidden keys behind panels and walls. There is a great little piano in the music room, which plays little tunes in various hysterical voices, such dogs barking, belching and passing wind, screaming, and regular creepy organ.

Other rooms offer the opportunity to create a personalized monster, choosing parts from the eyeball drawer, the brain bin, etc. A well designed monster can actually help you later in the game, so it pays to practice. Another room has a tickle/torture rack, which (surprise, surprise!) some

monsters actually like. There are disgusting ingredients to cook with in the kitchen, and the bathroom is hiding some dancing cockroaches. There are also some classic horror videos in the movie room. In the library, there are books which can be opened and read. These books contain special recipes and hints to finding keys. This makes the game interesting to a wide range of ages. Younger children are attracted by the unpredictable surprises, and older children are compelled to solve the game with logic and memory, to be the first to get the special reward cartoon, sound, or screen saver which is offered to the collector of all 13 keys

In the current market of \$40 to \$50 CD-R O M games, T h e Ultimate Haunted



House is a very good purchase. Staying power is the measure of success, and this game will gather little dust on your software shelf. The events are randomized so that no two games will ever repeat themselves, except for the personalities of the ghosts, which tend to remain constant. Good art, good sounds, good music enhance a well-designed, entertaining

David Anderson is an elementary school teacher and parent. He can be reached at david_and erson@mindlink.bc.ca. •

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Getting Psyched For Online Banking

• • By STEVE BAIN • •

anCity, Canada's largest credit union, has a reputation for being a leader in innovative banking. Recently, they reminded their customers of this once again by forming a partnership with BC Tel Interactive, in order to provide VanCity customers with five free hours of Internet training.

The move is an effort to take some of the intimidation out of computers and the World Wide Web and prepare their customers for the inevitable conveniences of online banking through the Internet. In keeping with their innovative style, VanCity is planning to launch an Internet banking service of sorts at some point within the coming year.

If they wish, banking customers at VanCity can already perform most banking transactions-short of actually receiving cash in hand-using their home computers, by using proprietary software and dialing a special access number. An estimated 12,000 customers already do so.

For most credit unions, trust companies, and banking customers, financial transactions through the Internet will be a hard sell. Many people already fear the integrity of online banking, based on media reports describing the ease with which unscrupulous computer hackers can violate even the most sophisticated security systems.

VPL quietly hits the Web

Now that Vancouver's downtown skyline features the new multimillion dollar jewel that is the city's newest library facility, will anyone really need to fight traffic and parking to get there? It may come as a surprise to some, but the entire Vancouver Public Library (VPL) has always been available online, just not in the usual way.

Before the World Wide Web became a household term, library patrons could browse through the library system's catalogue from the comfort of wherever, and search, locate, reserve, or transfer books to a branch nearest them through terminal access via computer modem-at (604) 665-5010. This electronic catalogue service, which is still accessible, even provides personal mail notices to expectant patrons, letting them know when their reserved tomes

The VPL has gone Hollywood now, you might say. Three months ago, the facility launched a Web site (http://www.vpl.vancouver.bc.ca) providing a cavalcade of information on library, community, and city access, plus links to related Web sites. Catalogue access is provided through a software link, which requires that your Internet browser be configured to use a telnet application to connect to it. Once successfully connected, it's the next best thing to being

Satellites give fastest Web access

Forget high-speed phone-line modems or cable modems. Connecting to the Web via a satellite dish provides the fastest access (one-way, at least) by far. Telesat Canada's DirecPC service, now piped through their Anik-E2 satellite, offers data-transfer downloading rates of up to 400 kilobits per second, which works out to roughly 28 times that of a common 14.4 Kbps modem hooked up to a phone line. The service is

now available through Vancouver Internet service provider Cyberion Networking Corp. They claim that the satellite service is much more flexible than ISDN access, which is available only to select markets.

Unfortunately, the service may only be realistic for the very Internet intense. The cost of using this service begins with the purchase of a \$1,000 personal satellite dish and its associated hardware and software. Once the dish is connected to your computer, you must have an account with a service provider, which can range between \$25 and \$40 per month.

Once online, you will pay monthly accesstime fees that can typically range between roughly \$20 for the first 30 megabytes of data received to \$56 for 130 megabytes.

BC courtrooms go online

A service was launched last month by the Province of British Columbia to post decisions by the BC Supreme Court and the BC Court of Appeal on the World Wide Web. The service is the first of its kind for the province—or any province, for that matter. The Web site (http://www.courts.gov.bc. ca/) will make available information and text from written and verbal judgment decisions, and will be updated on a daily basis.

In a related service, the BC Law Reform Commission, founded in 1969, already has its own Web site (http://bbs.qp.gov.bc. ca/lrc/lrchome.htm), where the commission considers and reviews all provincial laws.

Steve Bain is a writer in Vancouver, Canada. Send news or comments to 72623.1233@compuserve.com or Steve @belix.net .

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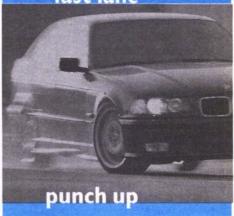
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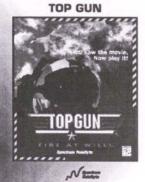


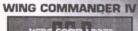
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Stocks Technology

Wall Street Highlights

By Thomas Klein

echnology stocks rebounded from July 17th lows and money flowed back into the "household" name technology companies. The trend of money flowing out of less established names and into the larger companies is due more to a late ibulli market cycle. When the markets appear to be approaching a peak, money flows into more defensive companies. Fund mangers do not want to be holding speculative investments when the future direction of the market is volatile. For the technology industry, this means that money flows to the well financed, market leaders. In this market, even some of the big names that do not meet earnings estimates will be severely punished. Witness the 20% correction in Motorala and Hewlett Packard, both companies disappointed with earnings forecasts and the market punished the stocks in one day. In nervous markets, there is no grace for unexpected news. For the short term, this means that tech companies will be under very close scrutiny. Companies will have to exceed earnings and growth expectations, and any shortcomings will be met with severe selloffs. For younger companies that are in the development stage, available capital will be tighter. Many tech companies who were in the process of going public are waiting for the IPO (initial public offering) market to improve. The dilemma is that many young companies need an infusion of cash to remain competitive. Unfortunately, the valuations for these companies are being revised downward which tends to place pressure on younger companies that have already gone

The flaw with the stock market is that it places traditional values and time constraints on tech companies. The reality is that Bill Gates could not forecast the potential of the

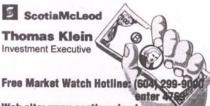
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Internet, imagine the difficulty for Wall street analysts. Expect volatility to remain in this industry, as long as analysts measure companies with quarterly performance and inaccurate growth forecasts. I think there has to be more value placed on management and the knowledge ratio of the employees. In looking at the human resources of a company, a clearer picture of value can be achieved. Strategic alliances between companies in the industry is key to defining who the key players will be and in what direction they will be heading. Vision and the ability to react quickly to changing trends will be a key recipe for technology companies to survive and grow. The competitiveness of the industry dictates that there will be winners and losers.

I have broken down some of the sectors and highlighted some of Wall Street's projections. It is important for companies in the industry to grasp the perception the market places on different high tech sectors. The market provides the investment dollars and therefore has a strong influence on the direction and success of the various components of the industry.

Computers, PCs and Peripherals

The PC industry is undergoing a fundamental structural change as PC companies compete for market share in an increasingly commodity-like and rapidly consolidating market. The keys for companies to become successful include: increasing brand awareness, forging key distribution deals, and remaining price competitive while decreasing inventory turnaround time. For the balance of 1996 expect PC unit shipment growth to slow to 17%, or about 68 million units worldwide. Reduced PC unit growth can be attributed to market saturation and sluggish global economies. In conjunction with slowing growth, the industry in experiencing intense downward price pressure. Aggressive pricing in the industry should continue as we are approaching the Christmas season and therefore expect gross margins to decline. Companies should maintain strict cost controls, increase productivity to implement the latest technology. Inventories must be managed to ensure that demand is satisfied without minting excessive product.





ting out. Large corporations have realized the value of setting up an intranet and the word is integration. The internal Internet is exploding on to the scene as companies are able to coordinate their internal information and databases better than they ever have before. The use of Web browser technology has proven that it can increase productivity and efficiency, thereby increasing profits. The demand for Internet working solutions will have the highest growth rate in the technology industry for the balance of 1996 and into 1997. Investors will reward companies that manage their growth and increase market share. Look for the market leaders to make calculated acquisitions in order to achieve market

Internet related companies exploded on to the market last year, culminating with a plethora of high flying IPOs, most of which have fallen back to earth. Wall Street is maintaining a wait and see attitude, with the majority of the interest gravitating towards companies providing infrastructure solutions. The market is looking for companies that can improve speed. The glaring lack of bandwidth imposes a lot of conditions on developing attractive content. Therefore, any solutions that are proven to increase speed would be handsomely rewarded. Security is the other major issue that concerns the financial viability of the Internet. In order to capitalize on commercial applications of the net, advances in the security of information is vital. There are numerous companies that provide security solutions for the Internet and intranet, but there are no clear market leaders. Investors are looking for a company to break-out and take a dominant position.

Computer Servers

Mainframe demand is in secular decline, but the markets have discounted this, hence this sector has been rated as stable with diminished growth prospects. UNIX server demand remains strong, particularly at enterprise server level. Spending on network-centric computing architectures continues to grow, fueling the demand for UNIX servers. The mainframe market has reached a point of saturation, with the shift to CMOS systems.

Semiconductors

Semiconductor stocks are expected to come under some pressure after the release of the July book to bill ratio. The number came in at .85 and .93 was expected. This figure indicates that semiconductor makers received \$85 in orders for every \$100 worth of chips they shipped. New chip orders in July were \$2.81 billion, down 5.1% from 2.96 million in June and down 37.6% from July 1995 bookings of \$4.51 billion. The numbers might be a little deceiving, because of

two factors, the falling prices for memory chips, particularly for DRAMS, and the usual summer weakness for orders. However, there does seem to be a lull in demand compared to this time last year. The lull in demand is not being seen by Wall street as an indication that this sector is headed for recession, but rather they are counting on a promising 4th quarter.

Wall street provides the investment capital but the reality is that the corporate use of technology will be the driving force of new products. Large corporations are looking for "killer apps", applications that will dramatically benefit the bottom line. They like to set the standards and this is where most of the technology battle will be won or lost. My suggestion to technology business owners

and investors is to invest in products or companies that will catch the eye, and deep pockets of the corporate world. For innovators and speculators, attempt to find out what the needs of large companies are and then find applications that can fill those requirements. Thomas Klein is an investment executive from Scotia Mcleod. He can be reached by e-mail: tomk@skybus.com.

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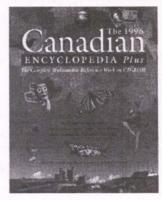
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Multimedia Encyclopedias: OVERVIEII







Ratings: 4 = highly recommended; 3 = afine product; 2 = okay, but...; 1= forget it.

• • By JIM STEINHART • •

nevelopedias are one of the driving forces in the CD-ROM software industry and with 1996 versions at rock bottom prices, the competition is cut throat.

There are significant differences in content between different products, which consumers will find hard to judge from looking at the box. The best starting point is the library, to see if the books deliver an appropriate level of information for your family. If the books are too simple, the CD isn't going to be any better, even enhanced with multimedia features.

We tested this year's Windows CDs by selecting topics to test timeliness, Canadian content, and if the product would support a

student through high-school (Dinosaurs, Psychology, Costa Rica, Calculus, and Jean

Cutting and pasting articles into Microsoft Word we took word counts and ran the grammar checker for indices of readability (passive sentences-the fewer the betterand the Flesch reading scale with 0 = unreadable and 100 = a whiz). Note in the reviews the extreme variation in total words for the five articles.

Yeah, Canada!

The big shift over last year is that the Canadian Encyclopedia has come into prominence and has added content from an international encyclopedia, so that it is closer to serving as the sole reference for a family's needs. We still recommend that it be paired with one of the American brands, however.

In the reviews below we concentrate on the differences to help you judge which to buy. However, there are features common to all, except where noted. All have historical timelines and atlases. All have decent reference lists to help students find other reading on each subject.

All provide adequate key-word searches, although they range from single-word-only up to fully logical searches using "and" and "or." All let you mark text and copy it into a word processor (note: this feature puts an extra burden on parents to teach the ethics against plagiarism).

All have videos, although the number varies. We give the video count a low importance, however, because once you've played them, they become a sideshow to your use of the content.

The 1996 Grolier Multimedia Encyclopedia

Cost: US\$35

Rating 2

Scores: sample word total, 6,800; passive sentences, 21 per cent; Flesch, 39; videos, 52.

The skimpy content and the fact that the windowing interface is poorly handled puts this product well behind the two main competitors in its price range. This CD comes bundled with a second CD that highlights the Maeght Foundation Modern Art collec-

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Microsoft Encarta 96

Price: \$70 (\$15 rebate for upgrades)

Rating: 3

Scores: sample word total, 10,800; passive sentences, 33 per cent; Flesch, 42; videos,

Encarta is based on the fairly basic Funk & Wagnall's Encyclopedia. While the interface is snazzy, the measured quality of the content is not as strong as the Compton's product and will not take a student as far through high-school. Its cleaner multimedia components might, however, make it a better choice for weaker students for whom inspiration to study is more important than content.

While a Windows 3.1 product, the interface has been radically redesigned to look like a Windows 95 screen. This redesigned version, however, runs unsatisfactorily slow. It also fails to correct the distortion of colours in playing videos.

Its search mechanism has been improved to do full logical searches. Its atlas is the best of the encyclopedias, but not as good as several standalone CD atlas products. It is the only one of the group that allows students to keep electronic notes with an article.

Contact: 1-800-563-9048.

Compton's Interactive Encyclopedia 1996 Edition

Costs: US\$37 Rating: 4

Scores: sample word total, 14,900; passive sentences, 28 per cent; Flesch, 50;

Providing better-written content and the most words at the lowest price makes this a very attractive buy. The interface is state-ofthe-art, complete with an electronic editing room where students can put their own multimedia term papers together. Students combine encyclopedia content with their own titles and voice recordings. Patrick Stewart, Star Trek's Captain Picard, appears on screen to provide help.

Buying Compton's gets you a bonus CD, the four-star rated Small Blue Planet, a wonderful collection of views of earth taken by satellite and aerial reconnaissance craft. This CD alone is worth the Compton's price.

The search interface, while adequate, lags behind the flexibility of the competition. The content has not been updated noticeably over the 1995 version. Perhaps this reflects the transfer of ownership from Compton's to Softkey International

Contact: 1-800-227-5609.

Britannica CD 2.0

Costs: \$1,249 Rating: 3

Scores: sample word total, 17,000+; passive sentences, 26 per cent; Flesch, 34; videos, 0.

The venerable Encyclopedia Britannica on CD would seem like an automatic top choice simply because of its thorough content. However, the interface can make it very cumbersome to find what you need

The Britannica company delivers its tome via both the Internet and CD (Windows or Mac versions). Consequently, they use the popular Web browser, Netscape, for both, although Netscape on the CD is a cut-down version. Searches are limited to 120 hits, with no chance to ask for another 120.

If you want to find a biography, the per-

son's name presents no challenge. However, try as we might, we could not generate a listing of the 50 American State Capitals. There are just too many topics containing the words State and Capital.

In comparison with competing CD encyclopedias, the Britannica CD demonstrates how inefficient an information delivery method the Internet can be.

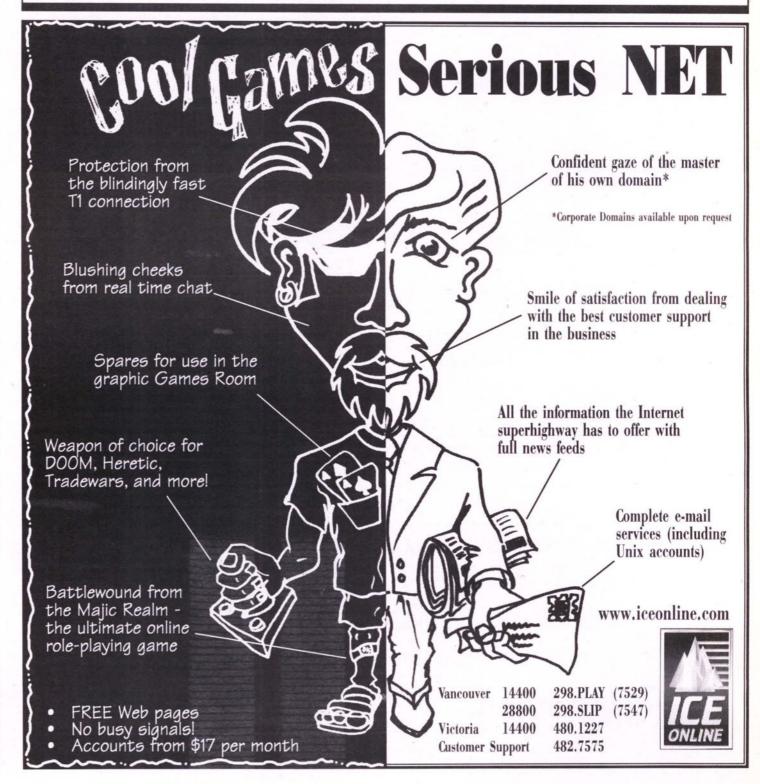
There is no video, timeline, or zoom-down atlas, although there are 198 national maps and a total of 2,000 other images

While the volume and quality of information far exceeds all the other encyclopedia's, our word total for the five subjects may be too low because we limited hits to ten articles and we are not certain we found all the relevant parts. Ease of reading scores



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are not bad either considering the authors do not hold back on advanced vocabulary. This CD is for the true scholar, not a highschooler who needs to be inspired by a few

If you want to try before you buy, purchase an article or two over the Net. What you'll see is what you'll get.

Contact: 1-800-323-1229.

1996 Canadian Encyclopedia Plus

Cost: \$99

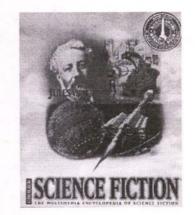
Rating: 3

Scores: sample word total, 5,600; passive sentences, 33 per cent; Flesch, 38; videos, 88.

This Windows product can't be beat for Canadian content and has now incorporated the Columbia Encyclopedia so that it begins to stand on its own as a general home reference.

The interface design is greatly improved to bring it to the state-of-the-art, although we still found errors that truncated the display of one article in mid-sentence. While there is no timeline or zoom-down atlas, there are 982 maps, mostly of Canada.

The product delivers Smartsearch, which not only provides for traditional fully logical searches, but also lets the user type in questions and get answers. Marking text for cut-







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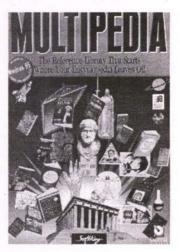
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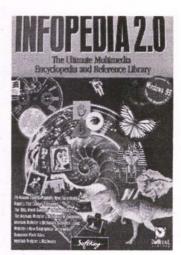


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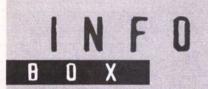




ting and pasting is the easiest of any of the encyclopedias.

We recommend it to complement the top encyclopedias above. The rating of 3 is because of its specialized content rather than its stature in the overall encyclopedia

Contact: McClelland & Stewart. •



Ouick multimedia picks

Infopedia 2.0, from Softkey International (1-800-227-5609). US\$50. Rating: 2 Up-to-date, but very slow.

Multipedia, from Softkey International (1-800-227-5609). U\$\$50. Rating: 3 A useful collection of dictionaries. Worth having.

The 1995 Guinness Multimedia Disc of Records, from Grolier Electronic Publishing (1-800-285-

Always fun to browse, a sure-fire gift for a PC

an invaluable reference.

continued from page 49



Apple Powerbook 5300CS

hard drive, 12.1-inch 800 x 600 TFT display with hardware-assisted MPEG, and all of the bells and whistles offered by the other systems I've looked at. The joy of this machine is in the little touches.

It comes with a pocket-sized quick reference card, for example, that explains how to read the indicators and how the function-key combinations work. The removable 6X CD-ROM drive comes in a protective case—the other systems had it encased in packing foam in the carton, but how you transport it afterwards is your problem. And there's anti-virus software preinstalled.

For the road warrior, the built-in 28.8 Kbps modem has a cellular phone connection, as well as VoiceView simultaneous voice and data, speakerphone, and fax capabilities.

The pointing device is a touchpad, and the keyboard, though noisier than most, feels fine. Infrared support features a 4 Mbps IrDA port. The bay for the floppy and CD-ROM drives is in the front of the machine, which makes changing disks or CDs clumsy if the machine is on your lap (or an airline tray table).

Battery life claims to be 4 hours at bestthat's if you shut off power-hungry devices like the sound circuitry and the modem. Charging seemed exceptionally quick.

Prices start at \$8,899.

It ain't light

The Toshiba Tecra 500CDT is not a machine I'd like to haul around with me for any distance. The base computer weighs a hefty 8 pounds! But this thing is built **IBM Thinkpad 560** solidly, with larger speakers than the others, and a

little fan to cool the 120 MHz Pentium processor. Also standard are 16 MB of RAM and a removable 1.26 GB hard disk, as is a 6X CD-ROM drive. The floppy drive can either swap with the CD-ROM drive, or plug into an external port, and you can also use the drive bay for an additional hard disk

The pointing device is a trackstick. Its buttons have very short travel, and were difficult to get used to-I was never sure when I pushed one if it had made contact. The screen is a 12.1-inch 800 x 600 TFT display that's exceptionally bright, with vibrant colours.

There's 16-bit audio with external volume control, and a built-in V.34 data/fax/voice modem with telephony capabilities, plus a 4 Mbps IrDA infrared port.

The A/C adapter is built-in, which adds to the system weight, but means that you only need to remember the cord. The Lithium Ion battery

does its best, but it has one heck of a lot to power, so with any sort of activity you'll be lucky to get a couple of hours out of it.

The keys on the keyboard are generously spaced, similar to a desktop machine except for the wide palmrest with the mouse buttons on it. Key travel and feel are also desktop-like, and the layout is fairly standard for a notebook.

The Tecra 500 CDT's SRP is \$7,349. ◆

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4534). US\$32. Rating 4

Groller Science Fiction, from Groller Electronic Publishing (1-800-285-4534). US\$40. Rating 3 Science fiction fans will find this Windows CD

Rock your comp

By DAVID ROSEN

Okay, everyone. Hands up who doesn't remember spending Saturday morning with your eyes glued to the TV set-our mother occasionally velling at you:"don't sit so close to that darn screen?"Ah, those fond memories!



Now the folks that brought us those catchy ditties such as "Conjunction Junction, What's Your Function?" have released a series of CD-ROMs designed to bring the magic of Saturday morning to your computer desktop.

Based on the popular music videos of the legendary Schoolhouse Rock! Series, the Grammar Rock CD-ROM charms kids of all ages into exploring and mastering English grammar, through fun music and interactive games. With the guidance of your host, Schoolhouse Rocky, kids learn how to construct sentences, using different parts of speech such as nouns, verbs, pronouns, and, of course, conjunc-

The plot of Grammar Rock is that Schoolhouse Rocky is planning a big "Knowledge is Power" party at the Conjunction Junction Diner. He needs your help finding and inviting all his

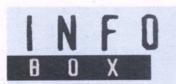
friends in the Grammar Gang.

Bring lots of quarters

There's a great music video jukebox in the Diner you can use to watch cool Grammar Rock videos. Watching these videos will help you learn what you need to complete the grammar activities on Hudson Street. Each time you successfully complete an activity, the Grammar Gang member you met during your activity gets to go to the party at the Diner. When you complete your activity, the entire Grammar gang will be assembled and the party starts rock-

Who knows? Perhaps after using the Grammar Rock CD-ROM for a little while, your youngster will get inspired and want to study English. In a few years, he or she could become a writer or editor of a computer newspaper. But first things first.

The other disks in the Schoolbouse Rock! series cover multiplication, American history, and science. •



Grammar Rock, from Electronic Arts/ Schoolhouse Rock. Macintosh and Windows CD-ROM. \$50. Recommended for kids aged 6 to 10 years (or much older!). For more information, visit http://www.vbe.com/~spowell/shr/

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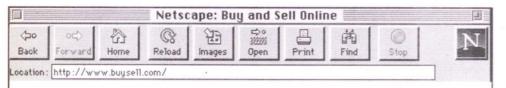
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- \checkmark "This service is just fantastic. I have referred several people to see what the future holds for business on the Internet. **This service is by far the** best I've seen on the Net. Keep up the good work!'
- ✓ "This is unequivocally the most useful web page I have seen in two years on the net...congrats!
- ✓ "I sold my car in one day! Thanks Buy&Sell!"
- \checkmark "I placed an ad online with the Buy&Sell for the first time this month and sold the item two days after the ad appeared. I was thrilled."
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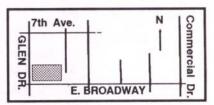
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在科技如此發達的社會,信件仍然有 其無法抹滅的功能?

信件唯一的缺點就是"慢"?

在網際網路 (Internet) 漸漸普遍的 今日, 電子郵件也正慢慢的在取代以往的 傳統郵件。而速度慢的問題, 在網際網路 上的電子郵件幾乎是不存在的?

在網際網路上,當您寄出一封信之後 的幾秒鐘之内,該封信就馬上被傳遞到收 件者的郵件主機,只要收件者連上郵件主 機, 收件者就能馬上取得任何人寄給他的 電子郵件了?

二、何謂電子郵件

電子郵件 (E-Mail) 就是指某份以數 位形式存在的訊息,能夠透過電腦網路傳 送到收件者的手中。

如此說來,任何的電腦檔案都能透過 電腦網路來傳送了?

没錯!

因爲,任何檔案本身都可以視爲"訊 息"?可執程式内的二進位碼(程式碼) 及語音檔内的數位化資料,都可以利用網 際網路的郵件傳遞功能來加以傳送。

而一般人所指的電子郵件,應是指純 爲文字内容的文件檔。

在網際網路上的電子郵件與我們日常 生活中的普通郵件幾乎是一樣的,當信件 無法寄達時,會被退回原寄件人。但此退 信的動作,不會像一般郵局可能耗費數 日,頂多只要幾個小時就能確定信件有没 有寄達 (没有被退件,就表示已經寄 達) o

至於要多久才知道有没有退件,這與 各大郵件主機有關,關係最大的就是您的 ISP? 如果您的 ISP 設定當無法與收件 人的郵件主機連繫時就退件,那您退件的 時間可能在短短的幾秒鐘?

有些比較盡職的 ISP, 他會想盡一切 辦法來與對方的郵件主機連線,所以退件 時間可能會在幾個小時之後。

爲什麼退件時間越長,越表示 ISP 盡 職呢?

因爲,當您申請了任何一個 ISP 的帳 號後,您的 E-Mail Address 就是由該 ISP 所發出,該 ISP 就等於是現實社會 的郵局一般,而您在該 ISP 郵局租用了 一個電子信箱,您的 E-Mail 位址就是該 信箱的編號。

而大部份的 ISP 都只有一部郵件主機 (有些大型的 ISP 會有數部郵件主機),

當郵件主機忙碌時,任何 ISP 的郵件主 機要與它連線送信進來,都會無法成功。

所以,當有人告訴您,寫給您的電子 信件常常被無緣無故退信,那表示您所參 加 ISP 的郵件主機過於忙碌所致?

而盡職的郵件主機 (看 ISP 的設定) 在首次無法連線時,會將所要送出信先暫 存起來,過一會兒再嘗試與對方郵件主機 連線,這樣試過數次後,一直不成功,原 發信人才會收到退件的通知。

而那種只送一次的郵件主機,就顯得 多麼不盡職了?

如果您認爲您所參加的 ISP 所架設的 郵件主機絕對是非常盡職,但寫出去的信 還是經常被退,那表示對方的 ISP 太混 了(因爲一部郵件主機已經不夠用了)?

善用電子郵件,您會發現它比現實社 會的信件還要好用、有效率。

在網際網路 (Internet) 中的信件, 一般可分為兩種:

1) SMTP (Simple Mail Transfer Protocol) 郵件

這種郵件一定會有固定的收件人,且您所 能送信的主機 (Host) 必須事先申請,申 請完成後,您就會有一個自己的網路郵遞 位址 (一般人所指的 E-Mail 就是指语 種)。這種信件傳送,正常情形下只透過 兩部郵件主機 (Mail Server), 也就是您 這端的郵件主機及收信人端的郵件主機 (在少數特例,有可能會經過第三部郵件 主機代轉某一封信)。

這種信件的保密性會比 News (討論信件) 高一點,但並不是 100% 保密 (讀者們可 要注意此點)。

2) NNTP (Network News Transfer Protocol) 郵件這類的信件,會被傳送到 所有參與網路運作的全部 NNTP 的伺服 器。寫信人只要寫好信件內容(提要及收 件人可忽略),此封信件會被傳遍全世界 的伺服器 (News Server)。

這種信件完全没有任何的隱密性,是 屬於公開性質的信件。

爲了達到討論的目的,所有的 News 信件都是公開的,請盡量別用來寫一些私 人間的事情。

三、寫信的技巧

早期,人們總是認爲電腦是部冷冰冰 的機器,又冷(雖然電腦總是有點溫溫的) 又没有感情,實在想像不到,現在竟然能 讓您對著電腦大笑或生氣。



雖然,利用電腦及通訊把彼此間的距 離拉近了,但由於看不到對方的表情,所 以經常容易方生誤會。因此,如何善用這 個符號表情,將是每位網路新鮮人所必修 的科目。

寫信時,盡量保持謙虚,不要用 "不 可能"、"絕對"、"那有這回事" 這類的文 句,盡量用 "可能"、"也許"、"難說"、" 或許" 這類的文句,相信您一定能當一個 快樂的電腦網路用戶的。

講話幽默很簡單(至少筆者就自認很 幽默,雖然有點噁心),但寫信幽默就不 是那樣容易了:-)

在電腦網路上寫信時,常因文字上的 限制而無法完全表達出真正的意思,所以 就開始有人利用一些符號來彌補文字上的 不足。以下就是一些常見的符號 (請將頭 向左轉 90 度來看):

- 這個符號經常用來放在一個句子的最 後面,表示這句話有開玩笑的意思。
- 同上, 但表情不太一樣, 是噘著嘴笑的,
- :-{) 這個一樣有開玩笑的意思,但是笑的 人有八字鬍
- 意義同上,但是笑的人嘴唇上有塗口 紅或其他的東西。
- 没有表情的臉,表示事不關己。
- 一副鬱悶的表情,表示很沮喪。
- :-(~心情非常不好,流下眼淚,哭得很慘。
- 眉角挑起,有不屑或諷刺涵意的笑臉。
- >:-< 非常牛氯的表情。
- ;-| 没有表情的臉,雖然事不關己,但有 點不以爲然。
- "喔哦"的意思。
- 非常高興。
- 一副鬱悶的表情,表示很沮喪,對於 您的說法頗不以爲然。
- 斜著嘴巴,有點吃驚的笑臉。
- 斜著嘴巴, 對您的說法頗不以爲然。
- 有點敵意的笑臉。當我們對某個人有 點不滿時,我們無法透過網路大聲的罵對 方,只好使用此一表情表示我們不滿的情 緒。
- 有點評論意味的笑臉,好像說 嗯 的意思。
- :*) 喝醉酒的笑臉,表示看了您的信,有 點讓我越看越迷糊之意。
- :~) 擠弄鼻子的笑臉,有一點開玩笑的意 思。
- [:|] 同意您的意見者是一個機械人或其它 的人工智慧的產物。
- 同意您的意見者有一個大鼻子。
- :%)% 同意您的意見者有長青春痘。
- =:-) 同意您的意見者有一個很長的臉。
- :-? 嘴上叼著煙斗的笑臉。
- 閉起一眼的笑臉。
- :-=) 留有鬍子的老頭子的笑臉。
- 相當鬱悶的笑臉。
- 鼻頭往左擠的笑臉。 :v)
- 舌頭往左伸出的笑臉。
- 有點滑稽的笑臉,鼻子擠向左邊。 :u)
- 有點滑稽的笑臉,鼻子擠向右邊。 :n)
- :< 有點生氣的表情。
- :-I 嘴角輕挑的笑臉。
- 微笑的表情。

B-| 戴著一付廉價的太陽眼鏡微笑。

:-I 嗯 一付恍然大悟的樣子。

當然,還有許多的符號,您也可以自 創(上面所列的那些符號,幾乎已是國際 通用),但總得讓別人看得懂吧! 善用這 些表情符號,是可以讓您的信件更有可看 性,也容易表現出您的意思給別人知道。

在您使用這些符號的時候,可別用錯 了。例如您想恭賀某人結婚,結果您卻用 了上面那個早日安息 (R.I.P.) 的特殊符 號, 豈不觸人霉頭:)

另外,除了符號外,還有一些常用的 縮寫英文,簡列如下:

AFAIK ----> As Far As I Know (就我所知)

ASAP ----> As Soon As Possible (儘快)

BTW ----> By The Way (順便、對了)

----> See You 的縮寫。

CUL ----> See You Later 的縮寫。

L8R ----> Later 的縮寫。

FYI ----> For Your Informatiom (給您 皋老)

OIC ----> Oh, I see 的縮寫。

II ----> You 的縮寫。

----> Your 的縮寫。

IMHO ----> In My Humble Opinion 的縮 寫(依我的淺見)。

<Grin> --> 有時簡寫成 <G>,通常置於行 末,表示說這句話是開玩笑的。

<FLAME> --> 特別強調之意

<VG> ----> 表示 Very Good (非常好)。

除了表情符號外,在寫信之前,您必 須要先把握幾個原則:

1) 認清每個信件區的主題,不要寫一些 文不對題的信:

在網際網路 (Internet) 裡,都已經依照 各種主題,而分別開設不同的信件討論區 (News), 每個信件區的討論就是針對該主 題,進行個人意見的交流與討論。

2) 不要有人身攻擊的文字出現。

盡量針對事情或技術層面來加以討論,而 不要有糾正別人的舉動。例如,說別人什 麼都不懂或是指責別人的不是, 甚至演變 成互相攻擊的局面。

3)維持有禮貌的紳士(或淑女)風度。

當別人對您有不當的言論時,最好自行忍 下來,不要立即就回信予以駁斥,以免造 成許多不必要的誤會。

4) 不要寫一些空穴來風,没有根據的 話。

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不要寫一些四處聽來的 "馬路消息 ",或是寫一些不著邊際的事(除非該區 所講的内容就是這些)。

5) 尊重網路上的每個人,且聽從每一信 件討論區的管理者的規勸。

在大部份的網路上的每一信件區都有 一固定的信區管理者,若是管理者出面糾 正某件事時,應該要聽從與配合。

6) 適時使用表情符號。

適時的使用表情符號,除了能使您的 信文更具可看性外,也能避免因爲每人用 詞水平不同,而造成許多不要的誤會。

在網路上寫信,請務必注意禮節,切 勿任意漫罵、毀謗、誣陷他人。寫信盡量 簡短,不要長篇大論 "傷人視力"。

只要您能把握以上幾點原則,相信您 必能快樂遨遊在這浩瀚無邊的網路世界 裡?

四、結語

想試試看您的 E-Mail 通不通嗎?

如果您有任何批評指教, 歡迎與筆者 聯絡,以下是我的聯絡方式:

E-Mail: iiml@iceonline.com

有興趣的讀者,可以直接連到筆者的 Web Site, URL 是

http://www.cads.com.tw

作者:林啓清 先生曾任職務: 超前資訊 系統部經理 國際惠多網路臺灣區總協調人 國際惠多網路 Hub 500 協調人 亞洲信檔轉接中樞系統 (ABES) 總引入站 德國經濟辦事處 電腦通訊顧問 目前職務:

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CLOSING THE LIABILITY WINDOW

• • By Rick Acton, F.C.A. • •

Individuals and/or businesses often discover they are liable for things that:

- a) They did not know they were liable for. b) They would not have been liable for if they had properly structured their affairs.
- c) Because of the liability laws they are a target for action although they were innocent of any act for which they should have been liable.

This subject comes to mind because of a discussion I had recently with a proprietor of a business. This individual is having to defend against a lawsuit to which the above three criteria apply. To defend herself she is looking at several thousand dollars in legal fees. It is possible that, although she believes she has done nothing wrong, the other side believes that the cost of legal fees may make her willing to pay a lesser amount to avoid the cost of defence. What I am talking about is not a large corporation with all of its resources defending itself against a lawsuit, but rather a small business owner who has everything she owns invested in the business and does not have a lot of money to fund litigation.

This type of occurrence is more common than you may think and if you are a small business owner you could face a similar action. Some of the readers of this column are individual consultants or small computer vendors or other businesses who make use of consultants or share office space. In the situation that I am discussing the proprietor shared office space with another person. From my conversation with her, it was clear in her mind and in the mind of the person she shared offices with that they were running independent businesses and should not be

responsible for each other's actions

What is often important in these situations is not the perception of the two parties sharing the office space, but the perception of the general public which might interact with either one of them. In this particular instance, a party is suing both the person they claim to be responsible for the loss and this proprietor who was operating a separate business. It the plaintiff's contention that it was all one business. In other words the plaintiff perceived that either the two parties were partners or that this proprietor was the employer. Consequently both are being sued.

In today's business environment, office sharing arrangements are quite common, as are combined consulting contracts. In these instances the appearance may be different from the reality. If this is the case, a third party may win based on appearance. If either situation could apply to you, you should take steps to make it clear to the public that although you may share offices or you may co-venture on the same contracts you are not partners nor is one of you the employee of the other. Some of these steps are:

- 1. Separate business cards. If you are using a common name on business cards it may imply to the public that you are one business.
- 2. Separate stationery.
- 3. Separate invoicing.
- 4. Separate bank accounts.
- 5. Written contracts with customers or clients should specify who the contractors are. If the business does not involve contracts, receipts should clearly document the business relationship.
- 6. If you are involved in a joint contract with somebody, you will probably be liable for each other's actions on that contract. You must make it clear that it is a separate joint

venture for the one contract and as such you are not responsible for each other's actions on other contracts. You might also be able to write into your contract that you are only responsible for any errors or omissions caused by yourself and not any caused by your co-contractor.

7. If you are a proprietorship consider incorporation. While incorporation will not protect the business against action, it may provide some protection for the personal assets of the owners. In the case I was citing above, the business is a proprietorship and as such the proprietor's personal assets are also exposed. In the past we often recommended incorporation to clients as part of a tax planning process. If the client's income was below a certain level a proprietorship was used as the cost of maintaining a corporation would eliminate the potential tax saving. However in the increasingly litigious world in which we live, incorporation makes sense for more small businesses that have traditionally been proprietorships.

8. Carry liability insurance to cover all eventualities. In this context, be sure you read and understand your policy. If your situation changes or you are entering into a joint contract with somebody, you should notify your insurer in writing to ensure that you will be covered. In the case I outlined, the proprietor felt abused by her insurance company when she learned that it would not defend in this action because she was not covered for the actions of a third party. Had she been aware of the issues, she could have had written coverage into her liability policy for this type of situation.

9. Maintain documentation. Verbal discussions become, at best, grounds for misunderstanding. Documentation provides greater protection.

This list is not all inclusive and there may well be further steps you should take in certain situations to ensure you are not taking unexpected responsibility for the actions of another party.

Because liability can arise in many innocent circumstances I would like to give another example of how this type of problem could arise. A computer vendor may be talking to an independent consultant in his store or renting space to an independent consultant and a customer comes in to buy a computer. The store owner suggests they talk to the consultant about installing the applicable software and modifying it to the customer's needs. The consultant may be an independent business but if this is not made clear and documentary evidence kept the owners of the store might find themselves being held liable for the actions of the independent consultant. Even if the case has no merit, the store owner may go through the agony of defending against a lawsuit.

If you are incorporated you may be able to structure your affairs so that your assets are protected. Your business then becomes a much less likely target for a frivolous lawsuit. I am not suggesting you unethically structure your affairs to avoid taking responsibility for your own actions. I do recommend you structure your affairs to ensure that you are not taking responsibility for the actions of others for whom you should not be responsible and that you protect your assets if somebody decides you are a worthy target.

Rick Acton, F.C.A. is a partner in the Vancouver firm of Acton Gunderson, Chartered Accountants. He may be reached at 734-4871 or FAX 734-9221or e-mail Rick_Acton@bc.sympatico.ca. ◆

continued from page 3.5 ments, Netscape for OS/2 will not be shipped as part of Merlin's bonus pack. Instead, it will be available shortly after Merlin's release from both Netscape's and IBM's web sites (http://home.netscape.com and http://www. ibm.com).

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An interesting comment on the net is that competition from Microsoft's Internet Explorer may have been motivated Netscape to develop for OS/2, a move which the company had previously resisted.

Unimaint 5.0

SofTouch Systems has released version 5.0 of Unimaint, the OS/2 utility package and uninstaller.

From its first release. Unimaint has been worth buying for the Repair INI utility alone. Because this utility deletes obsolete entries in OS2.INI, it often does more to increase OS/2 performance than a defragger.

Repair INI is still a major reason to buy Unimaint, However, version 5.0 offers other useful enhancements as well. They include:

- -enhancements to the INI editing capabilities -the addition of DDLs to the Class List Dialog -Cross Reference, a new feature listing all EXEs, DDLs and Drives on the system
- -the Application Mover, which automatically moves directory and files and updates all .INI files and the Config.sys to reflect the move.

Documentation has also been improved.

The manual has been rewritten to make it clearer for new users, and Function Wizards have been added on-line, making Unimaint the first OS/2 program (so far as I know) to adopt the Microsoft concept.

Most importantly, Unimaint 5.0 extends many of its functions to Windows programs. Unimaint now uninstalls Windows programs, and works with Windows INI files. Since the majority of OS/2 users have some Windows programs, this support for Windows makes Unimaint more valuable than ever.

Stardock Releases

On August 24. Stardock Systems released Avarice: The Final Saga, its long-awaited adventure game. Announced over a year ago as an OS/2 game similar to Myst or Seventh Guest, Avarice was originally scheduled for Christmas 1995, but was released only in a preview addition. Speculations that the game would be released last spring proved unfounded, and the delay was starting to be discussed on the net in worried tones

Stardock did not explain the delay, but growing pains are the likeliest reason. Stardock's Object Desktop, a replacement for the WorkPlace Shell, became an instant success when released in 1995, and Stardock's staff and plans quickly expanded into an unique mixture of utiliy and gaming products. Not only did Stardock co-sponsor with IBM the OS/2 Technical Exchange this spring. but Stardock plans to release another six products by Christmas: Object Desktop Professional, Process Commander, PlusPack for OS/2, Master of the Empire, Trials of Battle and Entrepeneur.

"It's safe to say we're pretty bullish on OS/2," Bradley Wardell, the president of Stardock, comments. All the same, Stardock is reportedly looking into Windows 95 development as well. After all, given its experience with 32 bit programs, Stardock has the jump on game designers used to 16 bit development.

New Describe Versions

DeScribe, the leading native OS/2 word processor, announced its Frequent Flyer Upgrade on August 29th. This upgrade, formally known as DeScribe 5.05, is being shipped to all registered users. As I write, some American users have posted on the internet that they have already received their upgrades, and DeScribe promises that all users should receive their upgrades by September 15th.

Originally, DeScribe planned to make the upgrade available on its website. Unfortunately, this plan would either have limited the size of the upgrade or taken hours to unload. Instead, DeScribe decided to ship the upgrade free, a move the company believes is a first in the computer industry..

The Frequent Flyer Upgrade incorporates all changes made since the release of DeScribe 5.0 and May 31, 1996, including an equation editor. The upgrade package encourages users to pass on their old copies of DeScribe, which can be re-registered for \$12.95US.

DeScribe 5.05 is a single-user copy of the word processor. DeScribe 5.06, a networked version, will be available October 1, and will be the basis for all future development of the software. Registered customers can upgrade to DeScribe 5.06 for \$39.95US until September 30. The upgrade also includes three months free subscription to DeClub, DeScribe's new email technical support service.

DeClub, scheduled to begin operation on October 1, costs \$39US per year for membership. Members can download products from the DeScribe website, and can receive contact DeScribe's technical support via e-mail up to six times a year.

They will also be eligible for any future free upgrades

Buyers of the Voyager CD who did not register, can do so for \$9.95US, either via DeScribe's website (http://www.describe. com) or by phoning (916) 923-3447.

Bruce Byfield is a technical writer and a recovering academic. He recently fell off the wagon, but insists he can stop teaching any time. •

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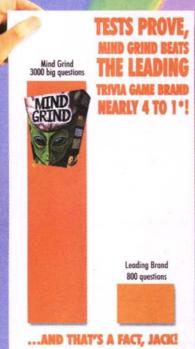
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index of Advertis	sers
Company	Page
3D Micro Able Computer Rentals	13 61
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Arete Computers	25
Athabaska University ATIC Computer	41 51
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Comwell Systems Creative Computers	37 33
Cugar	40
Cyberstore Digital Rain	43
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Faronics Technologies Inc.	48,58
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